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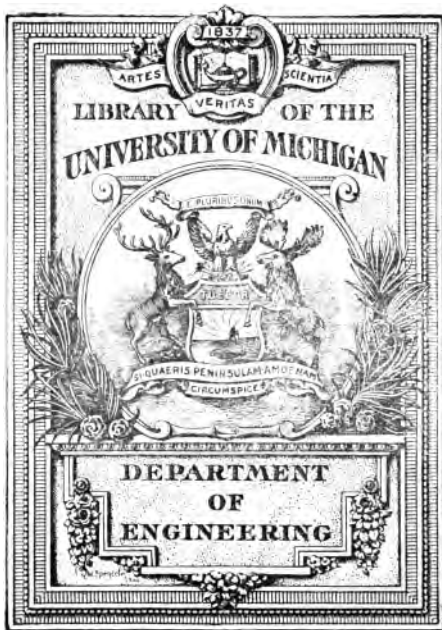
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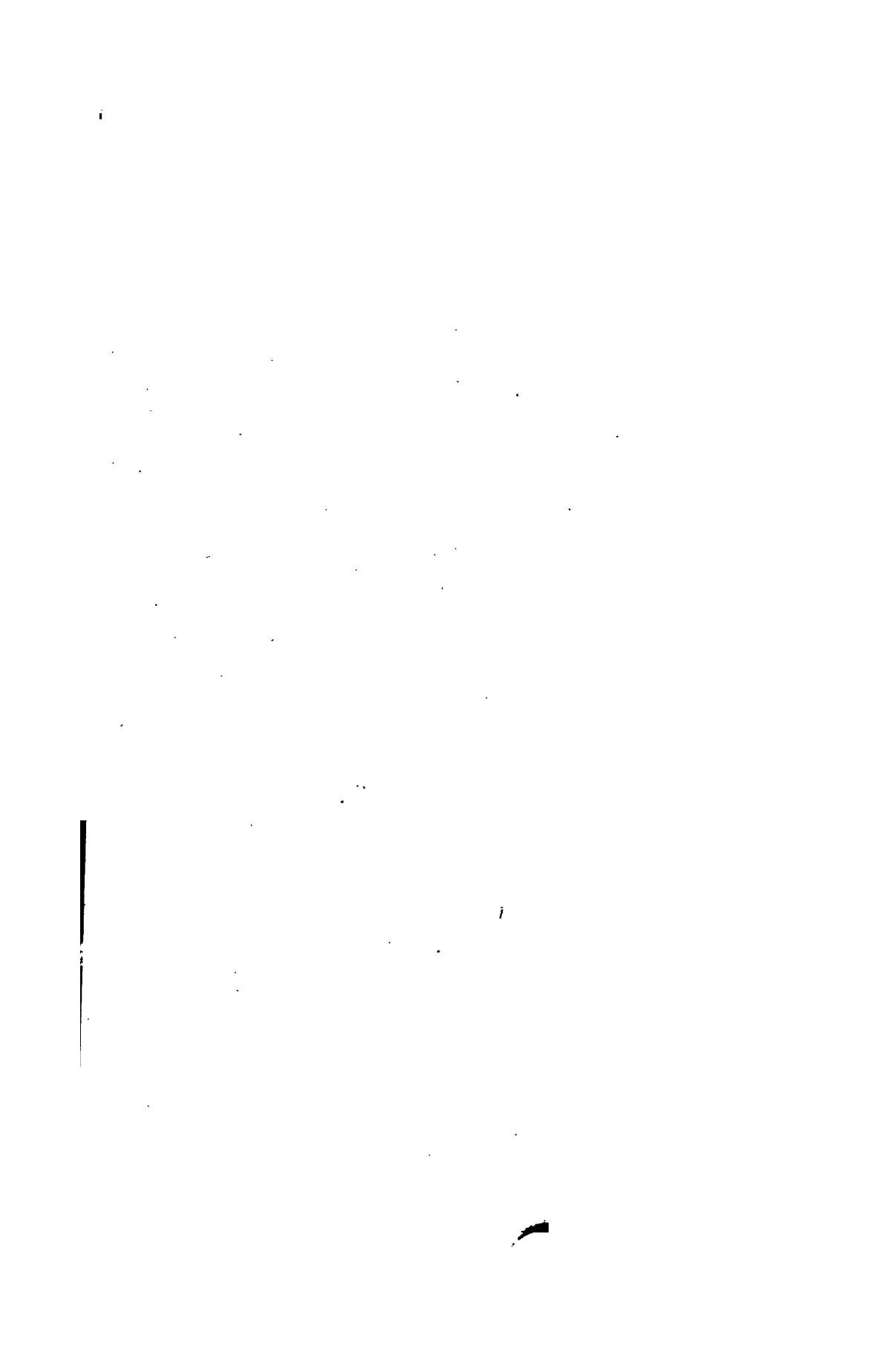
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72
COALING, DOCKING,

AND

REPAIRING FACILITIES

OF THE

PORTS OF THE WORLD,

WITH

ANALYSES OF DIFFERENT KINDS OF COAL.

NAVY DEPARTMENT,
OFFICE OF NAVAL INTELLIGENCE.

THIRD EDITION.

WASHINGTON:
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NAVY DEPARTMENT.

June 22, 1892.

Commanding officers of United States ships of war will, upon visiting foreign and home ports, embrace every opportunity to report without delay all errors and omissions which may occur in this publication, together with the corrections therefor, to the Navy Department.

All other persons who may use or be interested in this publication are requested to forward to the above address similar information.

JAMES B. SOLEY,
Acting Secretary of the Navy.

INTRODUCTION.

The first edition of this work appeared, in 1885, in the form of a Report upon the Comparative Merits of Anthracite and Bituminous Coal, to which was added in a second edition, issued in 1888, a number of analyses and tests of different kinds of coal, together with corrections in the tables to that date. In the present edition the discussion of the relative merits of anthracite and bituminous coal has been omitted, the form of the tables has been altered in some particulars, and many additions and corrections have been made.

In the compilation of Part II., which is new matter with the present edition, information has been obtained from reports from cruising vessels and other official sources, from the proprietors of a number of docks and industrial establishments, from various commercial and technical publications, and from the Dock Book of the British Hydrographic Office, the Shipping World Year Book, Turnbull's Port Guide for the United Kingdom, and Lloyd's Register.

The work of preparation of the book in its present form has been performed by Assistant Engineer W. H. Allderdice, U. S. N., of the Intelligence Staff.

C. H. DAVIS,

Commander, and Chief Intelligence Officer.

OFFICE OF NAVAL INTELLIGENCE,

June 22, 1892.

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I.

EXHIBIT OF COAL TO BE HAD AT THE PORTS OF THE
NORTH ATLANTIC, SOUTH ATLANTIC, PACIFIC,
ASIATIC, AND EUROPEAN STATIONS.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports.

Place of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost per ton.	Distance from coal pile to ship.
Port Huron, Ontario.	Aug., 1891.	Anthracite Bituminous				
St. Cloud, Minn.	Apr., 1892.	Anthracite Bituminous		83,000 tons received by lake, 1890.		
St. Cloud, Minn.	Oct., 1891.	Anthracite Bituminous	45,000 62,000	553,000 tons received by lake, 1890.	\$5.66, f. o. b. \$3.64, f. o. b.	20 to 400 feet.
Superior, Wis.	Oct., 1891.	Anthracite Bituminous Hocking Valley Youghiogheny Mansfield West Virginia	85,000 30,000 10,000 3,000	691,000 tons received by lake, 1890.	\$5.66, f. o. b. \$3.36, f. o. b. \$3.58, f. o. b. \$3.58, f. o. b. \$3.92, f. o. b.	30 to 500 feet.
Washburn, Wis.	1891.	Anthracite Bituminous		290,000 tons received by lake, 1890.		
St. Ignace, Mich.	1891.	Anthracite Bituminous		207,000 tons received by lake, 1890.		
St. Marie, Mich.	Apr., 1892.	Anthracite Bituminous		28,000 tons received by lake, 1890.		
St. Ignace, Mich.	Oct., 1891.	Anthracite Bituminous	12,000 60,000	324,500 tons received by lake, 1890.	\$5.66, f. o. b. \$3.64, f. o. b.	20 to 400 feet.
Bay View, Wis.	Aug., 1891.	Anthracite Bituminous		74,700 tons received by lake, 1890.		
Waukegan, Wis.	Aug., 1891.	Anthracite Bituminous		91,400 tons received by lake, 1890.		
Waukegan, Wis.	Jan., 1891.	Anthracite Bituminous	200,000	536,000 tons received by lake, 1890. 270,000 tons received by lake, 1890.	\$5.88, on cars.	

together with the usual supply on hand, cost, etc.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
.....	None	None	Two Harbors, Duluth, <i>Ashland</i> , Marquette, S. Ste. Marie.	Coal brought by lake from Oswego, Fairhaven, Charlotte, Buffalo, Erie, and Cleveland. Duty on soft coal, 60 cents per ton, anthracite free.
Alongside coal docks.....	None	None	Port Arthur, <i>Duluth</i> , Ashland, Marquette, S. Ste. Marie.	
Alongside docks owned by Pioneer Fuel Co., Northwestern Fuel Co., and Ohio Coal Co.; best modern facilities; no interruption.	None	None	Port Arthur, <i>Two Harbors</i> , Ashland, Marquette, S. Ste. Marie.	The harbor (Duluth and West Superior) is closed by ice from middle of December to beginning of April.
Alongside docks owned by St. Paul and Pacific Coal Co., Lehigh Coal and Iron Co., and Silver Creek and Morris Coal Co.; best modern facilities; no interruption.	None	None	Port Arthur, <i>Two Harbors</i> , Ashland, Marquette, S. Ste. Marie.	Coal is brought chiefly from Buffalo, Erie, and Cleveland. Lake freights, 30 cents to 50 cents per ton, August, 1891.
Alongside coal docks at Ashland; rapid.	None	None	Duluth, <i>Two Harbors</i> , Port Arthur, Marquette, S. Ste. Marie.	Coal freights from Buffalo, Erie, and Cleveland, 30 cents to 50 cents per ton, August, 1891.
.....	None	None	Duluth, <i>Two Harbors</i> , Ashland, Port Arthur, <i>S. Ste. Marie</i> .	Terminus C. & N. W. R. Coal comes chiefly by lake from Buffalo, Erie, and Cleveland. Freights by water, 40 cents to 50 cents per ton, August, 1891.
.....	None	None	Duluth, <i>Two Harbors</i> , Ashland, Port Arthur, Marquette, <i>Cheboygan</i> , Escanaba, Bay City.	Navigation interrupted from early in December to latter part of April; coal shipments through the St. Mary's Falls Canal, 1891, upwards of 2,000,000 tons.
Alongside wharf, by wheelbarrows; rapid.	None	None	<i>Green Bay</i> , Milwaukee, Chicago, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 50 cents per ton, August, 1891.
.....	None	None	<i>Escanaba</i> , Milwaukee, Chicago, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 45 cents to 55 cents per ton.
Alongside coal docks in 15 feet of water; no interruption.	None	None	Escanaba, <i>Milwaukee</i> , Chicago, Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 50 cents per ton.
.....	None	None	Escanaba, Manitowoc, <i>Chicago</i> , Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo, 40 cents per ton, August, 1891.

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.		
Chicago, Ill.	July, 1891.	Anthracite	} Large supply.	1,200,000 tons received by lake, 1890; 400,000 tons by rail.	\$4.05, on cars.	.....	
		Bituminous:						
		Illinois					1,500,000	\$2.02 to \$2.69.
		Indiana					1,200,000	\$2.13 to \$2.63.
		Ohio					470,000	\$3.36 to \$4.48.
		Pennsylvania					250,000	\$3.75 to \$3.86.
West Virginia	100,000	\$3.92.						
Grand Haven, Mich.	June, 1891.	Anthracite			\$6.25.	.....	
		Bituminous .....				.....
Cheboygan, Mich.	Apr., 1892.	Anthracite	} 8,000 tons received by lake, 1890.			.....	
		Bituminous						
Algoma, Ontario.						.....	
Collingwood, Ontario.	1883.	Bituminous	500	400 to 800	\$4.75, f. o. b.; \$4.95, stowed.	15 feet		
Owen Sound, Ontario.	1883.	Bituminous	1,000	700	\$4.60, f. o. b.	10 feet		
Bay City, West Bay City, Saginaw, and East Saginaw, Mich.	Aug., 1891.	Anthracite	} Ample supply; 84,000 tons received by lake, 1890.			.....	
Bituminous								
Port Huron, Mich.	Aug., 1891.	Anthracite	} 37,200 tons received by lake, 1890.			.....	
		Bituminous						
Port Sarnia, Ontario.	Aug., 1883.	Anthracite	500	1,000	\$6.00 to \$7.00, f. o. b.	30 feet		
		Bituminous	500	1,500	\$3.00, f. o. b. Stowing, per ton, 25 c.			
Detroit, Mich.	Oct., 1891.	Anthracite	} Large supply.		\$5.25, in cars.	.....	
		Bituminous					(Ohio)	\$2.80 to \$3.30, in cars.
Windsor, Ontario.						.....	
Amherstburg, Ontario.	1891.					.....	
Toledo, Ohio.	1891.	Bituminous	} Large supply.	800,000 tons shipped to lake ports, 1890.		.....	
		Anthracite					Moderate supply.	130,000 tons received, 1890.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
At coal docks; 18 feet of water alongside; rapid; no interruption.	None	Nearest at Wilmington, 50 miles distant.	Escanaba, Manitowoc, <i>Milwaukee</i> , Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo, Erie, and Cleveland, 40 cents to 60 cents per ton, August, 1891. Total coal production, Illinois, 1890, 13,000,000 tons; Indiana, 3,500,000 tons.
.....	None	Nearest at Corunna, 100 miles distant by rail.	Escanaba, <i>Milwaukee</i> , Chicago, Cheboygan, Bay City.	
.....	None	None	Chicago, Milwaukee, Escanaba, <i>S. Ste. Marie</i> , Bay City.	The navigation of the Straits of Mackinaw usually closes about December 5 and opens about April 20.
.....	None	None	<i>S. Ste. Marie</i> , Owen Sound, Bay City.	Duty on soft coal 60 cents per ton, anthracite free.
At wharf; rapid; no interruption.	None	None	<i>Owen Sound</i> , Algoma, Bay City.	
At wharf; rapid; no interruption.	None	None	<i>Collingwood</i> , Algoma, Bay City.	Coal freights from Buffalo, August, 1891, 65 cents per ton; duty on soft coal, 60 cents per ton, anthracite free.
.....	None	At Sebewaing, 30 miles distant, 100 tons per day, with hoisting capacity for 1,400; also, at Corunna, about 60 miles distant, 12,000 tons output, 1890.	Chicago, Milwaukee, Escanaba, <i>S. Ste. Marie</i> , Collingwood, Owen Sound, <i>Port Huron</i> , Detroit, Toledo, Sandusky, Cleveland.	Coal freights from Cleveland, 40 cents per ton.
.....	None	At Corunna, about 75 miles distant.	Bay City, <i>Detroit</i> , Toledo.	Coal freights from Cleveland, 30 cents to 35 cents per ton.
At wharf, by wheelbarrows; slow.	None	None	Bay City, <i>Detroit</i> , Toledo.	Coal freights from Cleveland, 35 cents per ton, August, 1891.
.....	None	At Jackson, 75 miles distant; 68,000 tons output, 1890.	Bay City, Port Huron, <i>Toledo</i> , Sandusky, Cleveland.	Coal freights from Buffalo and Cleveland, 25 cents per ton; receipts by lake, about 90,000 tons per year.
.....	None	None	As for Detroit.	
Alongside coal docks; no interruption.	None	None	As for Detroit.	Duty on soft coal 60 cents per ton, anthracite free.
Alongside coal docks, by large coal buckets; rapid; no interruption.	None	None	Bay City, Port Huron, Detroit, <i>Amherstburg</i> , Sandusky, Cleveland.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.	
Sandusky, and Huron, Ohio.	Oct., 1891.	Bituminous . . . (Ohio)	8,000	373,000 tons shipped to lake ports, 1890.	\$2.41 to \$2.69, in cars; \$2.58 to \$2.86, f. o. b.	Coal in cars on wharf.	
Lorain, Ohio.	1891.	Bituminous . . . (Ohio)	Ample supply.	190,000 tons shipped to lake ports, 1890.			
Cleveland, Ohio.	Sept., 1891.	Bituminous . . . (Pittsburgh)	} Large supply.	965,000 tons shipped to lake ports, 1890.	\$2.35.		
		Bituminous . . . (Ohio)		200,000 tons recd. 1890.	\$1.80 to \$3.08.		
		Anthracite			\$5.15.		
Ashtabula, Ohio.	1891.	Bituminous . . . (Ohio)	Large supply.	364,000 tons shipped to lake ports, 1890.			
Erie, Penn.	1891.	Bituminous . . . (chiefly from Pittsburgh district).	Large supply.	500,000 tons shipped to lake ports, 1890.		10 to 15 yards.	
Buffalo, N. Y.	Oct., 1891.	Anthracite Bituminous: Brier Hill, Ohio, Pennsylvania	} 35,000 at coal pockets within city limits.		\$5.00, f. o. b. \$4.48, f. o. b.		
						\$2.58 to \$3.25, f. o. b.	
Port Colborne, Ontario.	1891.	Anthracite Bituminous	} Considerable supply.				
St. Catharine's, Ontario.	1891.	Anthracite Bituminous	} Considerable supply.			Coal on docks at canal bank.	
Port Dalhousie, Ontario.	1891.	Anthracite Bituminous					
Hamilton, Ontario.	Aug., 1887.	Anthracite Bituminous	} Ample supply.	67,000 tons imported, 1886.	\$6.25, on wharf.		
					63,000 tons imported, 1886.	\$5.25, on wharf.	
Toronto, Ontario.	Nov., 1890.	Anthracite Bituminous	} Ample supply.	280,000 tons recd., 1890.	\$6.00, on wharf.		
					180,000 tons recd., 1890.	\$3.50, on wharf.	
	Nov., 1891.	Anthracite			\$5.75, retail.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
At Sandusky, alongside R. R. wharves, in 14 to 15 feet of water, by derricks, directly from cars; 50 tons per hour; no interruption, except at rare intervals; at Huron, similar facilities.	None	None	Detroit, Toledo, <i>Lorain</i> , Cleveland, Ashtabula, Erie, Buffalo.	Distance from Sandusky to Huron, 9 miles.
By coal derricks, on R. R. wharves; rapid.	None	None	Detroit, Toledo, Sandusky, <i>Cleveland</i> .	
At docks along water front, or at government pier, Whiskey Island, or by lighters carrying revolving derricks; rapid.	None	Within 40 miles; more extensive in Mahoning and Stark counties; most extensive in S. E. part of State.	Detroit, Toledo, Sandusky, <i>Lorain</i> , Ashtabula, Erie, Buffalo.	Total coal production in Ohio (1890), 12,250,000 tons.
At coal docks, or by steam lighters; rapid.	None	None in immediate vicinity.	Detroit, Toledo, Sandusky, Cleveland, <i>Erie</i> , Buffalo.	
At wharf, by wheelbarrows; moderately rapid; navigation interrupted by ice in winter.	None	Nearest in Mercer County, about 100 miles distant.	Detroit, Toledo, Sandusky, Cleveland, <i>Ashtabula</i> , Buffalo.	Production of bituminous coal in western and central Pennsylvania (1890), 34,000,000 tons.
At coal docks, or by steam lighters; rapid; lake navigation closed from early in December to middle of April.		None	Detroit, Toledo, Sandusky, Cleveland, Ashtabula, Erie, <i>Port Colborne</i> , S. Catharine's, Charlotte.	Total coal receipts, during 1890, amounted to about 6,000,000 tons, of which about 4,000,000 tons were anthracite; shipments of anthracite to lake ports amounted to upwards of 2,000,000 tons.
		None	Erie, Buffalo, <i>S. Catharine's</i> , Toronto, Charlotte.	Soft coal comes chiefly from Erie, anthracite from Buffalo; duty, 60 cents per ton on soft coal, anthracite free.
Good facilities; navigation interrupted in winter.		None	Erie, Buffalo, Port Colborne, <i>P. Dalhousie</i> , Toronto, Charlotte.	Coal chiefly from Erie and Buffalo; navigation of Welland Canal interrupted from beginning of December to end of April.
		None	Erie, Buffalo, <i>S. Catharine's</i> , Toronto, Charlotte.	Coal is brought from Erie, Buffalo, Charlotte, and Fairhaven; canal and lake navigation closed in winter.
At wharf; good facilities.		None	Erie, Buffalo, <i>P. Dalhousie</i> , Toronto, Charlotte.	All coal imported is from United States.
At wharf; good facilities; 12 feet water alongside; new pier building in west channel in deeper water.	None	None	Hamilton, <i>P. Dalhousie</i> , Charlotte, Port Hope.	All coal imported is from United States; duty on soft coal, 60 cents per ton, anthracite free.

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost per ton.	Distance from coal pile to ship.
Port Hope, and Coburg, Ontario.	Aug., 1883.	Anthracite.....	12,000	3,000	\$6.25, f. o. b.	100 yards for draught of 11 feet; $\frac{1}{2}$ mile for greater draught.
		Bituminous.....	10,000		\$6.00, f. o. b.	
Charlotte, N. Y.	Oct., 1891.	Anthracite.....	10,000	10,000	\$4.50.	About 10 feet
		Bituminous.....	5,000	3,000	\$3.25.	
Fairhaven, N. Y.	1890.	Anthracite.....	} Large supply available by rail.	120,000 tons shipped to lake ports, 1889.		
		Bituminous.....				
Oswego, N. Y.	June, 1892.	Anthracite.....	Large supply.	400,000 tons shipped to lake ports, 1890.	\$5.25, retail.	
Picton, Ontario.	Oct., 1883.	None.....	None.....			
Belleville, Ontario.	Sept., 1883.	Anthracite.....	7,000	6,000	\$6.50, f. o. b.	50 to 100 feet for vessels of 10 to 12 ft. draught.
		Bituminous..... (Penn.)	3,000		\$4.60, f. o. b.	
Kingston, Ontario.	Aug., 1887.	Anthracite.....	} 5,000	5,000	\$5.00, f. o. b.	40 feet.....
		Bituminous..... (Penn.)			\$3.75, f. o. b. Stowing, per ton, 25c.	

Exhibit of coal to be had at the following St. Lawrence River

Brookville, Ontario.	Oct., 1891.	Anthracite.....			\$5.50, retail.	
		Bituminous..... (Penn.)				
Ogdensburg, N. Y.	May, 1891.	Anthracite.....	} Considerable supply.		\$5.50, retail.	
		Bituminous.....				
Prescott, Ontario.	Aug., 1887.	Bituminous..... (Penn.)	8,000	About 20,000 tons imported yearly.	\$3.25, f. o. b.	
Montreal, Quebec.	Mar., 1891.	Nova Scotia.....	} 15,000	} 10,000 to 50,000	\$4.25 to \$5.00.	Short.....
		English.....			\$5.50 to \$6.00.	
		Scotch.....				
		Welsh.....				
			Anthr'te (U. S.)	} 15,000		\$5.75 to \$6.00.
		Bitum'us (U. S.)				
	Nov., 1891.	Cape Breton.....			\$3.75 to \$4.00.	
		Scotch.....			\$4.30, ex ship.	
		Anthr'te (U. S.)			\$6.00, retail.	
Sorel, Quebec.						

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
By carts; rapid; sometimes interrupted by ice in winter.	None	None	P. Dalhousie, Toronto, <i>Charlotte</i> , Oswego, Belleville, Kingston.	All coal imported is from United States; duty on soft coal, 60 cents per ton, anthracite free.
At wharf, with 15 feet alongside; 50 tons per hour, or as rapidly as coal can be stowed; navigation interrupted from November to April.	None	None	P. Dalhousie, Toronto, Port Hope, <i>Fairhaven</i> , Oswego, Kingston.	Lake port of Rochester; 150,000 tons of anthracite shipped by lake, 1890.
	None	None	<i>Charlotte</i> , Oswego, Belleville, Kingston.	
		None	<i>Charlotte</i> , <i>Fairhaven</i> , Belleville, Kingston.	
No facilities	British, at Kingston, to be established, 1887.	None	Belleville, <i>Kingston</i> , Oswego, <i>Charlotte</i> .	
By wheelbarrows, from sheds on docks; harbor closed in winter.	British, at Kingston, to be established, 1887.	None	<i>Charlotte</i> , Oswego, <i>Kingston</i> .	At unusually high water vessels of 14 feet draught can enter harbor.
At wharf, by wheelbarrows; rather slow; lighters can be obtained.	British, to be established.	None	Oswego, Belleville, <i>Brockville</i> , Ogdensburg, Prescott.	

ports, together with the usual supply on hand, cost, etc.

		None	Kingston, <i>Ogdensburg</i> , Montreal.	Nova Scotia coal is sold as far west as this point, but here and to the westward American coal has the market, the duty (60c. per ton) on bituminous coal not being sufficient to enable the Nova Scotia coal to compete.
	None	None	Kingston, <i>Prescott</i> , Montreal.	Coal receipts by water, 102,000 tons, 1890.
		None	Kingston, <i>Ogdensburg</i> , Montreal.	
At wharves; excellent facilities; no interruption during season of navigation; vessels not able to come to city can coal at lower docks.	None	None	Ogdensburg, Quebec.	Coal receipts at Montreal, 1890: Anthracite (U. S.), 200,000 tons; Bituminous: Nova Scotia, 417,000 tons, Great Britain, 10,000 tons.
	None	None	<i>Montreal</i> , Quebec.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following St. Lawrence River

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Three Rivers, Quebec.	Aug., 1883.	None for sale	None.			
Quebec, Quebec.	Sept., 1883.	Anthracite: American	18,000	50,000	\$6.50, stowed.	At wharf, Princess Louise Embankment, a few feet; at anchorage in stream, $\frac{1}{2}$ to $\frac{3}{4}$ mile.
		Welsh	1,000		\$5.40, stowed.	
		Bituminous: Pictou	2,000		\$4.00, stowed.	
		Sydney	2,000		\$3.75, stowed.	
		English	3,000		\$4.25, stowed.	
		Scotch	20,000		\$4.25, stowed.	
		Welsh	4,000	\$5.25, stowed.		
	July, 1887.	Anthracite (U. S.) Bituminous	4,000	5,000 20,000	\$6.05, stowed.	

Exhibit of coal to be had at the following North Atlantic Station

Gaspé, Quebec.	July, 1883.	Bituminous (Pictou)	Small supply.	Not to be depended upon.	Moderate.	
Newcastle, New Brunswick.	1883.	Bituminous	1,000	1,000	\$4.40 to \$5.40, stowed.	$\frac{1}{2}$ to $\frac{3}{4}$ mile
Summerside, Prince Edward Island.	Aug., 1883.	Bituminous: Pictou	2,000	500	\$3.00, alongside. \$3.50, alongside. Stowing, per ton, \$1.00.	$\frac{1}{2}$ to $\frac{3}{4}$ mile
		Sydney	500			
Tidnish, Nova Scotia.	Sept., 1891.	Bituminous (Nova Scotia)	Ample supply available by rail.			
Charlottetown, Prince Edward Island.	July, 1883.	Anthracite	} Limited supply.	}		
		Bituminous: Pictou				
		Sydney				
Pictou, Nova Scotia.	Nov., 1883.	Bituminous	Large supply.	500,000 to 750,000 tons yearly output.	\$2.50, best screened, on wharf.	
Georgetown, Prince Edward Island.	July, 1883.	None for sale				
Souris, Prince Edward Island.	July, 1883.	None	None	None		
Port Hood, Cape Breton Id., Nova Scotia.	1890.					
Amherst, Magdalen Ids.	July, 1883.	Bituminous (Pictou)	Small supply.	Not to be depended upon.		
Tilt Cove, Newfoundland.	1884.	Welsh (Owned by the copper mining company)	200	200	\$6.25, on wharf.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
At wharves; 18 to 36 feet of water alongside.	None.....	None.....	Montreal, <i>Quebec</i> .	11,700 tons of coal received during 1890.
At wharf or by lighters; 400 to 500 tons per day; liable to interruption late in fall.	None.....	None.....	Montreal, <i>Gaspé</i> ; Newcastle, Summerside, Charlottetown, Pictou.	Coal receipts at Quebec (1890). 62,000 tons.

ports, together with the usual supply on hand, cost, etc.

By lighters; slow.....	None.....	None.....	Quebec, <i>Newcastle</i> , Pictou.	
By lighters from sheds; slow; no interruption.	None.....	None.....	Quebec, <i>Gaspé</i> , Pictou.	
Hauled in cars to wharf, then on board in tubs or baskets; slow.	None.....	None.....	Quebec, <i>Newcastle</i> , <i>Charlottetown</i> , Pictou.	Harbor frozen up from November to April.
.....	None.....	Joggins mines, about 35 miles distant by rail; output, 300 tons per day.	Quebec, <i>Newcastle</i> , <i>Summerside</i> , <i>Charlottetown</i> , Pictou.	Gulf of St. Lawrence terminus. Chignecto Marine Transport Railway, for vessels of 2,000 tons; nearly completed; length, Tiddish to Amherst, 17 miles.
Vessels of 15 feet draught can go to wharves.	None.....	None on Prince Edward Id.	Quebec, <i>Summerside</i> , <i>Pictou</i> , <i>Halifax</i> .	Harbor frozen up in winter.
By chutes from elevated railways; rapid. Vessels of 23 feet draught can go alongside. Harbor closed by ice in winter.	None.....	Extensive; five collieries, with all improved facilities; output, 475,000 tons, 1890.	Quebec, <i>Newcastle</i> , <i>Summerside</i> , <i>Charlottetown</i> , Sydney, <i>Halifax</i> .	Total coal production of Nova Scotia, 1890, including collieries of Pictou, Sydney, and Cumberland districts, 1,950,000 tons.
.....	None.....	None.....	<i>Pictou</i> , <i>Halifax</i> .	Coal can be obtained in case of emergency.
No facilities.....	None.....	None.....	<i>Pictou</i> , <i>Halifax</i> .	Can be obtained in case of emergency.
.....	None.....	To a limited extent.	<i>Pictou</i> , <i>Port Mulgrave</i> , <i>Halifax</i> .	
No regular facilities.....	None.....	None.....	<i>Newcastle</i> , <i>Pictou</i> , Sydney.	
For vessels not exceeding 18 feet draught, alongside wharf, 200 tons per day; for larger vessels, by boats, slow.	None.....	None.....	Reikiavik, <i>St. John's</i> .	Supply on hand given in tables refers to amount usually obtainable by vessels; copper mining company carry a somewhat larger stock for their own use.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
St. John's, Newfoundland.	Aug., 1883.	Nova Scotia	9,000	12,000	\$4.50 to \$5.00,	100 feet
		Cardiff	2,000		f. o. b.	
		Anthracite	500		\$7.00 to \$7.50, f. o. b.	
St. Pierre, Miquelou Ida.	1883.	Anthracite	500	500	\$8.00, f. o. b.	1 mile to an- chorage in roads.
		Bituminous			(Sydney)		$5.00, f. o. b.
Sydney, and North Sydney, Cape Breton Id., Nova Scotia.	July, 1884.	Bituminous	Large supply.	250,000 tons yearly out- put.	\$2.00, f. o. b.	
Lingan, Cape Breton Id., Nova Scotia.	1884.	Bituminous	Large supply.			
Cow Bay, Cape Breton Id., Nova Scotia.	June, 1883.	Bituminous	1,000 (700 tons shipped daily).	10,000 (in winter).	\$1.75, f. o. b., at wharf. Stowing, per ton, 15c.	A mine 100 yards from wharf; oth- er mines 1 mile distant.
Louisburg, Cape Breton Id., Nova Scotia.	1883.	Bituminous	Large supply.		\$2.45, stowed.	
Arlivat, Madame Id., Nova Scotia.	Nov., 1883.	None	None	None		
Port Hawkesbury, Cape Breton Id., Nova Scotia.	Nov., 1883.	None	None			
Port Mulgrave, Nova Scotia.	Nov., 1883.	Bituminous	Small supply.	Ample sup- ply availa- ble by rail.		
Cape Canso, Nova Scotia.	Nov., 1883.	Pictou	Small supply.		\$3.00 to \$4.00.	
Halifax, Nova Scotia.	Aug., 1887.	Nova Scotia	10,000	4,000	\$4.00 to \$6.00.	$\frac{1}{2}$ mile from sheds to an- chorage.
		Anthracite	1,500	3,000	\$5.00 to \$7.00.	
		Patent fuel			\$5.00.	
Lunenburg, Nova Scotia.	1881.	Nova Scotia	Ample supply available by rail.			
Liverpool, Nova Scotia.						
Shelburne, Nova Scotia.						

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
At wharves; 18 to 36 feet of water alongside.	None.....	None.....	Montreal, <i>Quebec</i> .	11,700 tons of coal received during 1890.
At wharf or by lighters; 400 to 500 tons per day; liable to interruption late in fall.	None.....	None.....	Montreal, <i>Gaspé</i> , Newcastle, Summerside, Charlottetown, Pictou.	Coal receipts at Quebec (1890), 62,000 tons.

ports, together with the usual supply on hand, cost, etc.

By lighters; slow	None	None	Quebec, <i>Newcastle</i> , Pictou.	
By lighters from sheds; slow; no interruption.	None	None	Quebec, <i>Gaspé</i> , Pictou.	
Hauled in cars to wharf, then on board in tubs or baskets; slow.	None	None	Quebec, Newcastle, <i>Charlottetown</i> , Pictou.	Harbor frozen up from November to April.
.....	None	Joggins mines, about 35 miles distant by rail; output, 300 tons per day.	Quebec, Newcastle, <i>Summerside</i> , Charlottetown, Pictou.	Gulf of St. Lawrence terminus, Chignecto Marine Transport Railway, for vessels of 2,000 tons; nearly completed; length, Tidnish to Amherst, 17 miles.
Vessels of 15 feet draught can go to wharves.	None	None on Prince Edward Id.	Quebec, Summerside, <i>Pictou</i> , Halifax.	Harbor frozen up in winter.
By chutes from elevated railways; rapid. Vessels of 23 feet draught can go alongside. Harbor closed by ice in winter.	None	Extensive; five collieries, with all improved facilities; output, 475,000 tons, 1890.	Quebec, Newcastle, Summerside, <i>Charlottetown</i> , Sydney, Halifax.	Total coal production of Nova Scotia, 1890, including collieries of Pictou, Sydney, and Cumberland districts, 1,950,000 tons.
.....	None	None	<i>Pictou</i> , Halifax.	Coal can be obtained in case of emergency.
No facilities.....	None	None	<i>Pictou</i> , Halifax.	Can be obtained in case of emergency.
.....	None	To a limited extent.	<i>Pictou</i> , <i>Port Mulgrave</i> , Halifax.	
No regular facilities.....	None	None	Newcastle, <i>Pictou</i> , Sydney.	
For vessels not exceeding 18 feet draught, alongside wharf, 200 tons per day; for larger vessels, by boats, slow.	None	None	Reikiavik, <i>St. John's</i> .	Supply on hand given in tables refers to amount usually obtainable by vessels; copper mining company carry a somewhat larger stock for their own use.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports.

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost per ton.	Distance from coal pile to ship.
Port Arthur, Ontario.	Aug., 1891.	Anthracite				
		Bituminous				
Two Harbors, Minn.	Apr., 1892.	Anthracite		33,000 tons received by lake, 1890.		
		Bituminous				
Duluth, Minn.	Oct., 1891.	Anthracite	45,000	553,000 tons received by lake, 1890.	\$5.66, f. o. b.	20 to 400 feet.
		Bituminous	62,000		\$3.64, f. o. b.	
West Superior, Wis.	Oct., 1891.	Anthracite		691,000 tons received by lake, 1890.	\$5.66, f. o. b.	30 to 500 feet.
		Bituminous:				
		Hocking Valley	85,000			
		Youghiogheny	30,000			
		Mansfield	10,000			
		West Virginia	3,000			
Ashland, and Washburn, Wis.	1891.	Anthracite		290,000 tons received by lake, 1890.		
		Bituminous				
Marquette, Mich.	1891.	Anthracite		207,000 tons received by lake, 1890.		
		Bituminous				
Sault Ste. Marie, Mich.	Apr., 1892.	Anthracite		28,000 tons received by lake, 1890.		
		Bituminous				
Gladstone, and Escanaba, Mich.	Oct., 1891.	Anthracite	12,000	324,500 tons received by lake, 1890.	\$5.66, f. o. b.	20 to 400 feet.
		Bituminous	60,000		\$3.64, f. o. b.	
Green Bay, Wis.	Aug., 1891.	Anthracite		74,700 tons received by lake, 1890.		
		Bituminous				
Manitowoc, Wis.	Aug., 1891.	Anthracite		91,400 tons received by lake, 1890.		
		Bituminous				
Milwaukee, Wis.	Jan., 1891.	Anthracite	200,000	536,000 tons received by lake, 1890.	\$5.88, on cars.	
		Bituminous			270,000 tons received by lake, 1890.	

together with the usual supply on hand, cost, etc.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	None	None	Two Harbors, Duluth, Ashland, Marquette, S. Ste. Marie.	Coal brought by lake from Oswego, Fairhaven, Charlotte, Buffalo, Erie, and Cleveland. Duty on soft coal, 60 cents per ton, anthracite free.
Alongside coal docks	None	None	Port Arthur, Duluth, Ashland, Marquette, S. Ste. Marie.	
Alongside docks owned by Pioneer Fuel Co., Northwestern Fuel Co., and Ohio Coal Co.; best modern facilities; no interruption.	None	None	Port Arthur, Two Harbors, Ashland, Marquette, S. Ste. Marie.	The harbor (Duluth and West Superior) is closed by ice from middle of December to beginning of April.
Alongside docks owned by St. Paul and Pacific Coal Co., Lehigh Coal and Iron Co., and Silver Creek and Morris Coal Co.; best modern facilities; no interruption.	None	None	Port Arthur, Two Harbors, Ashland, Marquette, S. Ste. Marie.	Coal is brought chiefly from Buffalo, Erie, and Cleveland. Lake freights, 30 cents to 50 cents per ton, August, 1891.
Alongside coal docks at Ashland; rapid.	None	None	Duluth, Two Harbors, Port Arthur, Marquette, S. Ste. Marie.	Coal freights from Buffalo, Erie, and Cleveland, 30 cents to 50 cents per ton, August, 1891.
	None	None	Duluth, Two Harbors, Ashland, Port Arthur, S. Ste. Marie.	Terminus C. & N. W. R. R. Coal comes chiefly by lake from Buffalo, Erie, and Cleveland. Freights by water, 40 cents to 50 cents per ton, August, 1891.
	None	None	Duluth, Two Harbors, Ashland, Port Arthur, Marquette, Cheboygan, Escanaba, Bay City.	Navigation interrupted from early in December to latter part of April; coal shipments through the St. Mary's Falls Canal, 1891, upwards of 2,000,000 tons.
Alongside wharf, by wheelbarrows; rapid.	None	None	Green Bay, Milwaukee, Chicago, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 50 cents per ton, August, 1891.
	None	None	Escanaba, Milwaukee, Chicago, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 45 cents to 55 cents per ton.
Alongside coal docks in 15 feet of water; no interruption.	None	None	Escanaba, Milwaukee, Chicago, Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo and Cleveland, 50 cents per ton.
	None	None	Escanaba, Manitowoc, Chicago, Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo, 40 cents per ton, August, 1891.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Chicago, Ill.	July, 1891.	Anthracite	} Large supply.	1,200,000 tons received by lake, 1890; 400,000 tons by rail.	\$6.05, on cars.	.....
		Bituminous:				
		Illinois				
		Indiana				
		Ohio				
		Pennsylvania ..				
West Virginia.						
Grand Haven, Mich.	June, 1891.	Anthracite			\$6.25.	
		Bituminous				
Cheboygan, Mich.	Apr., 1892.	Anthracite	} 8,000 tons	received by lake, 1890.		.....
		Bituminous				
Algoma, Ontario.						
Collingwood, Ontario.	1883.	Bituminous	500	400 to 800	\$4.75, f. o. b.; \$4.95, stowed.	15 feet
Owen Sound, Ontario.	1883.	Bituminous	1,000	700	\$4.60, f. o. b.	10 feet
Bay City, West Bay City, Saginaw, and East Saginaw, Mich.	Aug., 1891.	Anthracite	} Ample supply;	} 84,000 tons received by lake, 1890.		.....
		Bituminous				
Port Huron, Mich.	Aug., 1891.	Anthracite	} 37,200 tons	received by lake, 1890.		.....
		Bituminous				
Port Sarnia, Ontario.	Aug., 1893.	Anthracite	500	1,000	\$6.00 to \$7.00, f. o. b. \$3.00, f. o. b. Stowing, per ton, 25 c.	30 feet
		Bituminous	500	1,500		
Detroit, Mich.	Oct., 1891.	Anthracite	} Large supply.		\$5.25, in cars. \$2.80 to \$3.30, in cars.	.....
		Bituminous (Ohio)				
Windsor, Ontario.						
Amherstburg, Ontario.	1891.					
Toledo, Ohio.	1891.	Bituminous	Large supply.	800,000 tons shipped to lake ports, 1890.		
		Anthracite	Moderate supply.	130,000 tons received, 1890.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
At coal docks; 18 feet of water alongside; rapid; no interruption.	None	Nearest at Wilmington, 50 miles distant.	Escanaba, Manitowoc, <i>Milwaukee</i> , Grand Haven, Cheboygan, Bay City.	Coal freights from Buffalo, Erie, and Cleveland, 40 cents to 60 cents per ton, August, 1891. Total coal production, Illinois, 1890, 13,000,000 tons; Indiana, 3,500,000 tons.
.....	None	Nearest at Corunna, 100 miles distant by rail.	Escanaba, <i>Milwaukee</i> , Chicago, Cheboygan, Bay City.	
.....	None	None	Chicago, Milwaukee, Escanaba, <i>S. Ste. Marie</i> , Bay City.	The navigation of the Straits of Mackinaw usually closes about December 5 and opens about April 20.
.....	None	None	<i>S. Ste. Marie</i> , Owen Sound, Bay City.	Duty on soft coal 60 cents per ton, anthracite free.
At wharf; rapid; no interruption.	None	None	<i>Owen Sound</i> , Algoma, Bay City.	
At wharf; rapid; no interruption.	None	None	<i>Collingwood</i> , Algoma, Bay City.	Coal freights from Buffalo, August, 1891, 65 cents per ton; duty on soft coal, 60 cents per ton, anthracite free.
.....	None	At Sebewaing, 30 miles distant, 100 tons per day, with hoisting capacity for 1,400; also, at Corunna, about 60 miles distant, 12,600 tons output, 1890.	Chicago, Milwaukee, Escanaba, <i>S. Ste. Marie</i> , Collingwood, Owen Sound, <i>Port Huron</i> , Detroit, Toledo, Sandusky, Cleveland.	Coal freights from Cleveland, 40 cents per ton.
.....	None	At Corunna, about 75 miles distant.	Bay City, <i>Detroit</i> , Toledo.	Coal freights from Cleveland, 30 cents to 35 cents per ton.
At wharf, by wheelbarrows; slow.	None	None	Bay City, <i>Detroit</i> , Toledo.	Coal freights from Cleveland, 35 cents per ton, August, 1891.
.....	None	At Jackson, 75 miles distant; 08,000 tons output, 1890.	Bay City, Port Huron, <i>Toledo</i> , Sandusky, Cleveland.	Coal freights from Buffalo and Cleveland, 25 cents per ton; receipts by lake, about 90,000 tons per year.
.....	None	None	As for Detroit.	
Alongside coal docks; no interruption.	None	None	As for Detroit.	Duty on soft coal 60 cents per ton, anthracite free.
Alongside coal docks, by large coal buckets; rapid; no interruption.	None	None	Bay City, Port Huron, Detroit, <i>Amherstburg</i> , Sandusky, Cleveland.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Sandusky, and Huron, Ohio.	Oct., 1891.	Bituminous (Ohio)	8,000	373,000 tons shipped to lake ports, 1890.	\$2.41 to \$2.69, in cars; \$2.58 to \$2.86, f. o. b.	Coal in cars on wharf.
Lorain, Ohio.	1891.	Bituminous (Ohio)	Ample supply.	190,000 tons shipped to lake ports, 1890.		
Cleveland, Ohio.	Sept., 1891.	Bituminous (Pittsburgh)	} Large supply.	965,000 tons shipped to lake ports, 1890.	\$2.35.	
		Bituminous (Ohio)				\$1.90 to \$3.08.
		Anthracite	} Ample supply.	200,000 tons recd. 1890.	\$5.15.	
Ashtabula, Ohio.	1891.	Bituminous (Ohio)	Large supply.	364,000 tons shipped to lake ports, 1890.		
Erie, Penn.	1891.	Bituminous (chiefly from Pittsburgh district).	Large supply.	500,000 tons shipped to lake ports, 1890.		10 to 15 yards.
Buffalo, N. Y.	Oct., 1891.	Anthracite Bituminous : Brier Hill, Ohio, Pennsylvania	} 35,000 at coal pockets within city limits.		\$5.00, f. o. b.	
						\$4.48, f. o. b.
					\$2.58 to \$3.25, f. o. b.	
Port Colborne, Ontario.	1891.	Anthracite Bituminous	} Considerable supply. }			
St. Catharine's, Ontario.	1891.	Anthracite Bituminous	} Considerable supply. }			Coal on docks at canal bank.
Port Dalhousie, Ontario.	1891.	Anthracite Bituminous				
Hamilton, Ontario.	Aug., 1887.	Anthracite Bituminous	} Ample supply.	67,000 tons imported, 1886.	\$6.25, on wharf.	
					63,000 tons imported, 1886.	\$5.25, on wharf.
Toronto, Ontario.	Nov., 1890.	Anthracite Bituminous	} Ample supply.	280,000 tons recd., 1890.	\$6.00, on wharf.	
					180,000 tons recd., 1890.	\$3.50, on wharf.
	Nov., 1891.	Anthracite			\$5.75, retail.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
At Sandusky, alongside R. R. wharves, in 14 to 15 feet of water, by derricks, directly from cars; 50 tons per hour; no interruption, except at rare intervals; at Huron, similar facilities.	None	None	Detroit, Toledo, <i>Lorain</i> , Cleveland, Ashtabula, Erie, Buffalo.	Distance from Sandusky to Huron, 9 miles.
By coal derricks, on R. R. wharves; rapid.	None	None	Detroit, Toledo, Sandusky, <i>Cleveland</i> .	
At docks along water front, or at government pier, Whiskey Island, or by lighters carrying revolving derricks; rapid.	None	Within 40 miles; more extensive in Mahoning and Stark counties; most extensive in S. E. part of State.	Detroit, Toledo, Sandusky, <i>Lorain</i> , Ashtabula, Erie, Buffalo.	Total coal production in Ohio (1890), 12,250,000 tons.
At coal docks, or by steam lighters; rapid.	None	None in immediate vicinity.	Detroit, Toledo, Sandusky, Cleveland, <i>Erie</i> , Buffalo.	
At wharf, by wheelbarrows; moderately rapid; navigation interrupted by ice in winter.	None	Nearest in Mercer County, about 100 miles distant.	Detroit, Toledo, Sandusky, Cleveland, <i>Ashtabula</i> , Buffalo.	Production of bituminous coal in western and central Pennsylvania (1890), 34,000,000 tons.
At coal docks, or by steam lighters; rapid; lake navigation closed from early in December to middle of April.		None	Detroit, Toledo, Sandusky, Cleveland, Ashtabula, Erie, <i>Port Colborne</i> , S. Catharine's, Charlotte.	Total coal receipts, during 1890, amounted to about 6,000,000 tons, of which about 4,000,000 tons were anthracite; shipments of anthracite to lake ports amounted to upwards of 2,000,000 tons.
Good facilities; navigation interrupted in winter.		None	Erie, Buffalo, <i>S. Catharine's</i> , Toronto, Charlotte.	Soft coal comes chiefly from Erie, anthracite from Buffalo; duty, 60 cents per ton on soft coal, anthracite free.
Good facilities; navigation interrupted in winter.		None	Erie, Buffalo, <i>Port Colborne</i> , <i>P. Dalhousie</i> , Toronto, Charlotte.	Coal chiefly from Erie and Buffalo; navigation of Welland Canal interrupted from beginning of December to end of April.
At wharf; good facilities.		None	Erie, Buffalo, <i>S. Catharine's</i> , Toronto, Charlotte.	Coal is brought from Erie, Buffalo, Charlotte, and Fairhaven; canal and lake navigation closed in winter.
At wharf; good facilities.		None	Erie, Buffalo, <i>P. Dalhousie</i> , Toronto, Charlotte.	All coal imported is from United States.
At wharf; good facilities; 12 feet water alongside; new pier building in west channel in deeper water.	None	None	Hamilton, <i>P. Dalhousie</i> , Charlotte, Port Hope.	All coal imported is from United States; duty on soft coal, 60 cents per ton, anthracite free.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Lake ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Port Hope, and Coburg, Ontario.	Aug., 1883.	Anthracite	12,000	3,000	\$6.25, f. o. b.	100 yards for draught of 11 feet; $\frac{1}{2}$ mile for greater draught.
		Bituminous	10,000		\$6.00, f. o. b.	
Charlotte, N. Y.	Oct., 1891.	Anthracite	10,000	10,000	\$4.50.	About 10 feet
		Bituminous	5,000		\$3.25.	
Fairhaven, N. Y.	1890.	Anthracite	} Large supply available by rail.	120,000 tons shipped to lake ports, 1889.		
		Bituminous				
Oswego, N. Y.	June, 1892.	Anthracite	Large supply.	400,000 tons shipped to lake ports, 1890.	\$5.25, retail.	
Picton, Ontario.	Oct., 1883.	None	None			
Belleville, Ontario.	Sept., 1883.	Anthracite	7,000	6,000	\$6.50, f. o. b.	50 to 100 feet for vessels of 10 to 12 ft. draught.
		Bituminous	3,000		\$4.00, f. o. b.	
Kingston, Ontario.	Aug., 1887.	Anthracite	} 5,000	5,000	\$5.00, f. o. b.	40 feet
		Bituminous			\$3.75, f. o. b.	
		(Penn.)			Stowing, per ton, 25c.	

Exhibit of coal to be had at the following St. Lawrence River

Brookville, Ontario.	Oct., 1891.	Anthracite			\$5.50, retail.	
		Bituminous				
		(Penn.)				
Ogdensburg, N. Y.	May, 1891.	Anthracite	} Considerable supply.		\$5.50, retail.	
		Bituminous				
Prescott, Ontario.	Aug., 1887.	Bituminous	8,000	About 20,000 tons imported yearly.	\$3.25, f. o. b.	
Montreal, Quebec.	Mar., 1891.	Nova Scotia	} 15,000	} 10,000 to 50,000	\$4.25 to \$5.00.	Short
		English			\$5.50 to \$6.00.	
		Scotch				
		Welsh				
			Anthr'te (U. S.)	15,000		\$5.75 to \$6.00.
		Bitum'us (U. S.)				
Sorel, Quebec.	Nov., 1891.	Cape Breton			\$3.75 to \$4.00.	
		Scotch			\$4.30, ex ship.	
		Anthr'te (U. S.)			\$6.00, retail.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics>.</i>)	Remarks.
By carts; rapid; sometimes interrupted by ice in winter.	None	None	P. Dalhousie, Toronto, <i>Charlotte</i> , Oswego, Belleville, Kingston.	All coal imported is from United States; duty on soft coal, 60 cents per ton, anthracite free.
At wharf, with 15 feet alongside; 50 tons per hour, or as rapidly as coal can be stowed; navigation interrupted from November to April.	None	None	P. Dalhousie, Toronto, Port Hope, <i>Fairhaven</i> , Oswego, Kingston.	Lake port of Rochester; 150,000 tons of anthracite shipped by lake, 1890.
	None	None	<i>Charlotte</i> , Oswego, Belleville, Kingston.	
		None	<i>Charlotte</i> , <i>Fairhaven</i> , Belleville, Kingston.	
No facilities	British, at Kingston, to be established, 1887.	None	Belleville, <i>Kingston</i> , Oswego, <i>Charlotte</i> .	
By wheelbarrows, from sheds on docks; harbor closed in winter.	British, at Kingston, to be established, 1887.	None	<i>Charlotte</i> , Oswego, <i>Kingston</i> .	At unusually high water vessels of 14 feet draught can enter harbor.
At wharf, by wheelbarrows; rather slow; lighters can be obtained.	British, to be established.	None	Oswego, Belleville, <i>Brookville</i> , Ogdensburg, Prescott.	

ports, together with the usual supply on hand, cost, etc.

		None	Kingston, <i>Ogdensburg</i> , Montreal.	Nova Scotia coal is sold as far west as this point, but here and to the westward American coal has the market, the duty (60c. per ton) on bituminous coal not being sufficient to enable the Nova Scotia coal to compete.
	None	None	Kingston, <i>Prescott</i> , Montreal.	Coal receipts by water, 102,000 tons, 1890.
		None	Kingston, <i>Ogdensburg</i> , Montreal.	
At wharves; excellent facilities; no interruption during season of navigation; vessels not able to come to city can coal at lower docks.	None	None	Ogdensburg, Quebec.	Coal receipts at Montreal, 1890: Anthracite (U. S.), 200,000 tons; Bituminous: Nova Scotia, 417,000 tons, Great Britain, 10,000 tons.
	None	None	<i>Montreal</i> , Quebec.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Wilmington, N. C.	Sept., 1884.	Anthracite	Ample supply.		\$4.50.	
		Bituminous:			\$3.50.	
		Clearfield			\$3.50.	
		Cumberland			\$3.50.	
		Kanawha				
Charleston, S. C.	Sept., 1884.	Anthracite	Ample supply.		\$4.50.	½ mile to 1 mile.
	Bituminous:	\$3.50.				
	Clearfield	\$3.50.				
	Cumberland					
Charleston, S. C.	Feb., 1889.	Bituminous: Alabama, Georgia.	None kept on hand except U. S. Government supply.		\$4.76 to \$5.04, if ordered by rail.	At wharf, 300 to 400 ft.
Savannah, Ga.	May, 1891.	Anthracite	Ample supply.		\$0.72, retail.	
		Bituminous			\$5.60, retail.	
Jacksonville, Fla.						
Fort Pierce, Fla.	Mar., 1888.	Anthracite	700	700	\$4.35.	
Tallahassee, Fla.	Dec., 1890.	Anthracite	60	28,000 tons shipped, 1890.	\$8.00.	At coal dock, 90 feet; at Permanent Wharf, about ½ mile.
		Alabama	500		\$3.00 to \$3.75.	
	Oct., 1891.	Alabama	1,000	1,000	\$3.00, alongside;	
			Large supply available by rail.		\$4.15, f. o. b.;	
					\$4.26, stowed;	
					\$3.50, f. o. b., at chutes;	
					\$3.63, stowed.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	None	None; the only colliery of importance in the State is that of the Egypt Coal Co., in Chat-ham County, about 125 miles distant by rail; capacity, 500 tons per day.	Hampton Rds., <i>Charleston</i> , Port Royal, Savannah, Key West.	Available for vessels not exceeding 19 feet draught.
Alongside wharf	None nearer than Port Royal.	None	Hampton Rds., Wilmington, <i>Port Royal</i> , Savannah, Nassau, Key West, Havana.	
At wharf, for vessels not exceeding 21 feet draught; or by lighters from Savannah.	U. S.	None	Hampton Rds., Wilmington, Charleston, <i>Savannah</i> , Nassau, Key West, Havana.	
At wharf, for vessels of light draught; slow; larger vessels by lighters at anchorage in Tybee Roads.	U. S., at Port Royal.	None	Hampton Rds., Wilmington, Charleston, <i>Port Royal</i> , Jacksonville, Nassau, Key West, Havana.	Total production of coal in Georgia, 1890, amounted to 225,000 tons. The coal fields are in the northwestern portion of the State, in Dade and Walker counties. The only colliery of importance is that of the Georgia Mining, Manufacturing and Investment Co., at Coal City; semi-bituminous.
By lighters at anchorage in 3 to 4 fathoms. Vessels exceeding 17 feet draught can not cross the bar.	None	None	Hampton Rds., Charleston, Port Royal, <i>Savannah</i> , Nassau, Key West, Havana.	
At Government wharf....	U. S.	None	Hampton Rds., Charleston, Port Royal, Savannah, Nassau, <i>Havana</i> , New Orleans.	
At coal dock at navy yard, 16 feet draught, 30 tons per hour; at Permanent Wharf, navy yard, 16 to 22 feet draught, 9 tons per hour; by lighters, 20 to 30 tons per hour; at coal chutes, Pensacola, 20 to 24 feet draught, 70 tons per hour. No interruption in any case.	U. S., at navy yard; 800 tons anthracite, 180 tons bituminous.	Extensive in Alabama, about 270 miles distant by rail, output, upwards of 3,000,000 tons per year.	Key West, Havana, <i>Mobile</i> , New Orleans, Galveston, Vera Cruz.	In case notice be given beforehand, a sufficient supply of coal can be dumped on Permanent Wharf at navy yard to enable a vessel to coal at rate of 30 tons per hour. Coal in excess of normal supply at Pensacola can be obtained from mines within 48 hours. Export Coal Co., of Pensacola, have four sea-going lighters, and will deliver Alabama coal, upon order, at any point on Gulf of Mexico.

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Mobile, Ala.	Jan., 1889.	Anthracite	Small supply. Ample supply.		\$8.50 to \$12.00.	Short, for ves- sels not ex- ceeding 18 feet draught.
		Alabama .....					$3.35, f. o. b.
	Jan., 1891.	Alabama	70,000 tons re- ceived, 1890.		\$1.25 to \$3.47, f. o. b.	
New Orleans, La.	July, 1891.	Anthracite	Small supply.		\$9 to \$9.50, retail.	½ mile to coal yard.
		Bituminous: Pittsburgh .....					$4.35, f. o. b.
		Alabama	} Large supply. {	380,000 tons re- ceived, 1890. 20,000 tons re- ceived, 1890.	\$3.75, in cars.	
		Alabama				
Galveston, Tex.	Sept., 1884.	Anthracite	} Depends on demand. {		\$7.50.	
		Cumberland .....					$5.50.
	Sept., 1891.	Alabama	Ample supply.		\$5.49, delivered.	
		Cumberland				
Brazos Santiago, Tex.						
Brownsville, Tex.						
Matamoras, Mexico.	Sept., 1883.	None	None	None		
Tampico, Mexico.	July, 1890.	Anthracite	} Limited supply. {		\$12.00 to \$18.00.	7 or 8 miles.
		Bituminous: Alabama				
		English				
Tuspan, Mexico.	Sept., 1890.	None	None	None		
Vera Cruz, Mexico.	Mar., 1884.	Anthracite	} Large supply. {		\$10.00 to \$13.00; delivery and stowing, per ton, \$1.50.	¾ mile to an- chorage in harbor; 3¼ miles to an- chorage off Sacrificios Id.
		Bituminous .....					44,000
		Patent fuel	30,000			
	1888.	Bituminous	Total receipts for the year, 33,000 tons.			
	Dec., 1890.	Bituminous			\$13.00, at yard.	
		(U. S.)				

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters in harbor; vessels of 16 feet draught can go alongside wharves; no interruption.	None	None	Key West, Havana, Pensacola, <i>New Orleans</i> , Galveston, Vera Cruz.	Alabama coal mining is confined to the Warrior, Cahaba, and Coosa districts, in the counties of Tuscaloosa, Jefferson, Walker, Shelby, Bibb, and St. Clair; mines 215 to 280 miles distant from Mobile by rail.
By lighters; 250 to 600 tons per day; no interruption.	None	None	Key West, Havana, Pensacola, <i>Mobile</i> , Galveston, Vera Cruz.	Cost per ton of Pittsburgh coal at New Orleans fluctuates from about \$3.10 to \$4.95; that is, from 25 cents to 40 cents per barrel of 180 lbs.
By lighters. Vessels exceeding 15 feet draught can seldom cross the bar.	None	None	Key West, Pensacola, <i>New Orleans</i> , Vera Cruz.	A depth of 30 feet over the bar is contemplated upon the completion of the harbor improvements at this port.
By lighters, at anchorage outside bar, in 7 fathoms.	None	None	New Orleans, <i>Galveston</i> , Vera Cruz.	Vessels exceeding 9½ feet draught can seldom cross the bar.
.....	None	None. There are mines at Laredo, about 250 miles up the Rio Grande, also at Eagle Pass, about 100 miles further.	As for Brazos Santiago.	Not available for large vessels.
.....	None	None. Sabinas coal fields near Piedras Negras, about 350 miles up Rio Grande, are nearest in Mexico; output, 8,000 tons per month, 1889.	As for Brazos Santiago.	Not available for large vessels.
By lighters; slow. Heavy ground swell commonly prevents lighters crossing bar. A smooth day must be waited for.	None	None	Pensacola, New Orleans, Galveston, <i>Vera Cruz</i> , Key West.	The improvements in progress at the mouth of the Panuco River are designed to remove the bar, to enable large vessels to proceed directly to city. Rail connection extends from this port to the main line of the Mexican Central R. R.
.....	None	Deposits about 60 miles inland to be developed.	As for Tampico.	No coal is used at Tspan except by one tug-boat, the owner of which imports a small quantity, which is not for sale; wood is extensively used.
By lighters; moderately rapid; liable to interruption by northerly winds, October to May. Extensive harbor improvements in progress, to be finished in 1893.	None	Deposits about 100 miles inland, worked in a primitive way.	Pensacola, New Orleans, Galveston, <i>Tampico</i> , Key West.	Coal is unprotected; becomes deteriorated by exposure to weather, and mixed with sand blown over it by wind (1884).

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Belize, British Honduras.	Jan., 1884.	Welsh	Small supply.	Supply uncertain.	\$9.90.	
Livingston, Guatemala.	Apr., 1885.	None	None	None		
Port Cortez, Honduras.	Aug., 1883.	Welsh	Small supply, chiefly for local use.	None for sale, as a rule, except for local use.	\$10.00.	
Truxillo, Honduras.						
Bluefields, Mosquito Reservation, Nicaragua.	Aug., 1884.	None	None	None		
Greytown, Nicaragua.	Nov., 1890.	Bituminous	1,500		\$8.00, alongside.	
Port Limon, Costa Rica.	Nov., 1890.	Alabama	Small supply, for use of R. R.	About 900 tons per month imported by R. R. Co.	\$6.50, cost to R. R. Co.	
Boca del Toro, Chiriqui Lagoon, Colombia.	Mar., 1883.	None	None	None	Can be mined at about \$4.50 per ton, employing native labor.	
Colon, Colombia.	Jan., 1891.	Pocahontas	Constantly	arriving	\$11.00, on cars; \$11.75, stowed.	1/4 mile
Cartagena, Colombia.	Sept., 1890.	None	None	None, except small quantity imported for revenue cutter and harbor tugs.		
Sabanilla, and Barranquilla, Colombia.	Nov., 1890.	None for sale	Small quantity of patent fuel, from Great Britain.	About 400 tons per year, imported by Barranquilla Railway and Pier Co. for own use.	\$10.00 to \$11.00, cost to importers.	

ports, together with the usual supply on hand, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
From coal vessel; by lighters, towed by ship's boats.	None	None	Key West, Havana, <i>Cienfuegos</i> , Kingston, Greytown, Colon.	The London and Belize S. S. Co., for service of their steamers, usually have a coal vessel in port, remaining until discharged, but supply can not be depended upon at all times.
.....	None	None	As for Belize.	
Alongside wharf, or by launches; slow.	None	None	As for Belize.	
Lighters	None	None	As for Belize.	
.....	None	None	Kingston, Greytown, Colon.	
By lighters; open roadstead with moderate to heavy ground swell; liable to frequent interruption. Harbor improvements in progress.	None	A mine of coal of good quality on SE. border of Lake Nicaragua (reported).	Kingston, Colon.	The coal at this port is for the use of the tugs, dredges, and locomotives of the Nicaragua Canal Construction Co., but will be furnished U. S. vessels by courtesy of the Co.
.....	None	None	Kingston, Greytown, Colon.	The coal is the property of the Costa Rica E. R., and may not be at all times obtainable by vessels.
By mining, and by ship's boats.	None	Deposits not regularly worked.	Kingston, Greytown, Colon.	
.....	None	None	Kingston, Greytown, Curacao, St. Lucia.	Coal owned by Panama R. R. Co., 35,670 tons imported 1890, all from U. S.; coal freights, per ton, \$2.80.
Alongside wharf from coal cars, by baskets furnished by ships; slow; sometimes interrupted by northers, October to February.	None	Deposits about 25 miles inland, not worked.	Kingston, Colon, Curacao.	Custom-house duty at Cartagena of \$12.50 per ton prevents importation of coal; river steamers and the few manufactories use wood.
.....	None	Deposits inland, not worked.	As for Cartagena.	No vessels coal at either port; small quantities may be obtainable at times from Barranquilla Railway and Pier Co., sole importers; Magdalena River steamers use wood. Port of Barranquilla is not available for sea-going vessels, owing to Magdalena bar. Railway runs from Barranquilla to Salgar, 8 miles from Sabanilla.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton	Distance from coal pile to ship.
Santa Marta, Colombia.	Nov., 1890.	None	None	None		
Rio Hacha, Colombia.	Sept., 1883.	Cardiff	Small supply.	100	\$10.00.	
	Nov., 1890.	None	None			
Maracaibo, Venezuela.	Oct., 1890.	None	None	None		
Willemstad, Curaçao.	Dec., 1885.	Cardiff	400	300 to 400	\$10.00, alongside.	½ mile to usual anchorage.
	Sept., 1890.	Anthracite Bituminous: Cardiff American			\$10.00 to \$12.00.	
	July, 1891.	Cardiff, Cumberland		Regular supply.		
Puerto Cabello, Venezuela.	Dec., 1885.	Cumberland	450	Supply uncertain.		
	Apr., 1892.	None	None			
La Guayra, Venezuela.	Apr., 1892.	Patent fuel (from Cardiff).	About 6,400 tons imported per year for use of railways.		\$14.00.	
		Bituminous (from New York).	About 3,600 tons imported per year by Caracas Gas Co.			
		Cannel (from Newport News).				
Barcelona, and Guanta, Venezuela.	Apr., 1890.	Bituminous, native. (To be obtained upon completion of railway from the coal mines to Guanta.)				
Cumana, Venezuela.						
Carupano, Venezuela.	Aug., 1884.	Cardiff (brought from Trinidad).	Small quantity.	No regular supply.		
Río Caribe, Venezuela.	Aug., 1884.	None	None			

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	None	None	As for Cartagena.	
By lighters, when coal is obtainable; slow; liable to interruption during windy season, December to April.	None	Plentiful deposits near Sinn and Atrato rivers; not regularly worked.	As for Cartagena.	
	None	None; large deposits, about 60 miles distant, on Rio Limon, not worked. Coal on Toas Id., injurious to boilers.	Colon, Kingston, <i>Curacao</i> , St. Thomas, St. Lucia.	Wood is the universal fuel; coal was formerly imported for the tugs at the bar, but its use has been discontinued.
By lighters; rapid; no interruption; sometimes from newly arrived coal vessels before they are unloaded.	Netherlands Government contract.	None	Colon, Kingston, <i>St. Thomas</i> , St. Lucia, Port-of-Spain.	This port affords better facilities for coaling than any of the neighboring ports on the Spanish Main.
At coaling pier, available for vessels of 18 feet draught; 15 tons per hour from staithes.				
Alongside wharf, or by lighters; poor facilities.	Venezuelan Government usually keeps about 300 tons near St. Philip's Castle.	None	Colon, Kingston, <i>Curacao</i> , St. Thomas, St. Lucia, Port-of-Spain.	Harbor is being dredged to a depth of 26 feet, 1891.
By lighters, or at quays; 10 to 40 feet alongside.	None	Deposits in vicinity, not worked; mines of Barcelona, 135 miles distant.	As for Puerto Cabello.	There are no regular coal dealers. Vessels can not depend upon being able to obtain a supply at all times. Coal freights from U. S. ports to La Guayra are quoted at \$3.00 to \$3.25 per ton; no duty.
At new port of Guanta, 12 miles from Barcelona, an iron wharf, with 25 to 50 feet alongside, nearly finished; to be fitted with best coal-shipping appliances.	None	In Naricual and Capiricual valleys; railway from mines to Guanta, 24 miles, nearly finished.	<i>Curacao</i> , Port-of-Spain, St. Lucia, St. Thomas.	Old port of Barcelona to be closed to commerce, and new port of Guanta to be decreed a port of entry upon completion of railway from coal mines to Guanta; 12 miles of railway finished, 6 additional miles graded, 6 incomplete, April, 1890.
	None	None	As for Barcelona.	
No regular facilities	None	None	As for Barcelona.	
	None	None	As for Barcelona.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.	
St. George, Bermuda.	Sept., 1883.	Anthracite	150	75	\$9.60.	60 feet, if at wharf.	
		Cardiff	600	400	\$8.60.		
	Oct., 1890.	Anthracite					\$8.50.
		Bituminous: Cardiff					\$8.25.
		Kanawha			\$8.50.		
Hamilton, Bermuda.	Apr., 1887.	At dockyard: Cardiff	2,000	2,000 to 6,000	\$4.75; British contract price.		
		Patent fuel	400				
		At Grassy Bay: Cardiff	1,200	1,000			
	Oct., 1890.	Anthracite					\$8.50.
		Bituminous: Cardiff					\$8.25.
		Kanawha			\$6.50.		
	1891.	Cardiff (Cory's Merthyr)			\$8.27, alongside; Austrian Govt. contract price.		
Nassau, New Providence Id., Bahamas.	Sept., 1890.	None	None	No regular supply.	About \$12 when obtainable.	2 miles from outer anchorage to the town.	
Matthew Town Great Inagua Id., Bahamas.	Jan., 1890.	Bituminous	40; also 150 at Rocky Point, E. end of island.	No informa- tion con- cerning fu- ture main- tenance of supply.	\$8.00, f. o. b.		
Turk's Island, B. W. I.	Sept., 1883.	None	None	None			
Baracoa, Cuba.	Feb., 1884.		Small quantity; poor quality.	Supply not to be depended upon.			
Nuevitas, Cuba.	Feb., 1884.	None for sale				About 3 miles for vessels of 18 feet draught.	
	Aug., 1889.	Bituminous	300				
Sagua la Grande, Cuba.	Sept., 1890.	Bituminous		10,000 tons im- ported dur- ing year, Sept., 1889, to Sept., 1890.	\$6.50 to \$7.00.		
Cardenas, Cuba.	Nov., 1883.	American	400	1,500 to 4,000	\$11.00 to \$12.00, alongside; la- borers, per day, each, \$2.00.	About 12 miles, for vessels ex- ceeding 13 ft. draught; smaller ves- sels, 1 mile.	
		Scotch	600				
		Welsh	500				
	Jan., 1884.	Bituminous: American			\$8.00, at city.		
		English					

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
In harbor, at wharf, by wheelbarrows; rapid; or at Murray anchorage, from hulks, by baskets or hoisting; rarely interrupted by storms.	British, at dockyard, Ireland Id., 13½ miles distant.	None	Halifax, New York, <i>Hampton Rds.</i> , Key West, St. Thomas.	Importation of coal to Bermuda, including both St. George and Hamilton, amounts, exclusive of Government supply, to about 4,000 to 5,000 tons per year, of which about 1,000 tons are anthracite, the remainder bituminous, chiefly Cardiff.
By lighters; or vessels may go alongside coal wharf. Alongside coal hulk; about 10 tons per hour; winter gales interrupt.	British, at dockyard, Ireland Id., 4 miles from Hamilton; 2,000 to 6,000 tons.	None	As for St. George.	Coal from dockyard, furnished naval vessels by courtesy, is settled for at the Home Office in London, through diplomatic channels.
Lighters used when coal is obtainable. Considerable risk from June to October.	None	None	Bermuda, Charleston, <i>Key West</i> , Havana.	Vessels exceeding 16 feet draught must lie outside of bar.
At anchorage off Rooky Point, by lighters.	None	None	Key West, Havana, <i>Santiago</i> , Kingston, San Juan, St. Thomas.	Inquiry for coal at Rooky Point should be made at Matthew Town.
.....	None	None	As for Matthew Town.	
.....	None	None	As for Matthew Town.	
.....	Small quantity, poor quality, belonging to Spanish Govt.	None	Key West, Havana, Matanzas, Cardenas, <i>Sagua la Gr.</i> , San Juan, St. Thomas.	Coal is not regularly imported. Wood is almost exclusively used in province of Puerto Principe, the 300 tons of coal on hand in 1889 being part of 400 tons imported for sale in 1886.
.....	None	None	Key West, Havana, Matanzas, <i>Cardenas</i> , San Juan, St. Thomas.	Not available for vessels exceeding 16 feet draught.
By baskets to lighters; hoisted on board in tubs of 500 lbs. capacity; very slow, 40 tons per day; liable to interruption by norther, September to February.	None	None	Key West, Havana, <i>Matanzas</i> , <i>Sagua la Gr.</i> , San Juan, St. Thomas.	Total importation of coal at Cardenas, 1888, amounted to 17,000 tons, of which 10,000 came from United States and 7,000 from Great Britain.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Matanzas, Cuba.	Mar. 1890.	Bituminous: Pennsylvania, Alabama, Lancashire, Scotch.	Moderate supply.	Variable supply.	\$8.00 to \$10.00, f. o. b.	About 1 mile to usual anchorage.
Havana, Cuba.	Apr. 1890.	Anthracite Bituminous: Cardiff Cumberland Newcastle Alabama .....	.....	80,000	\$9.00 to \$11.00.	At wharf, a few yards.
Cienfuegos, Cuba.	Mar. 1888.	Anthracite Bituminous: Cumberland Cardiff English .....	.....	5,000 to 10,000; largest supply, Jan. to May.	\$10.08, f. o. b.	½ mile to large vessels coaling at anchorage.
Trinidad, Cuba.	Sept. 1883.	Bituminous (from U. S.)	550	900	\$8.50 to \$9.00, on wharf; lighterage, per ton, extra, \$1.50.	3 miles for large vessels; for smaller according to draught.
Santiago, Cuba.	Jan. 1890.	Anthracite Cumberland Welsh English Scotch	Ample supply. Small supply.	12,400 tons imported, 1889. 600 tons imported, 1889.	.....	300 yards
Port Antonio, Jamaica.	Mar. 1891.	Cumberland	700	1,000	\$6.50.	About 500 feet.
Port Morant, Jamaica.	Mar. 1891.	Cardiff	A cargo to arrive.	1,000 (to be maintained).	\$6.50.	.....
Port Royal, Jamaica.	Nov. 1888.	Cardiff Patent fuel	.....	4,000	\$6.00.	200 feet
	Feb. 1891.	Cardiff Patent fuel	1,000 1,000	.....	.....	.....
Kingston, Jamaica.	Feb. 1891.	Cardiff	10,000	10,000	\$8.00 to \$8.75.	20 to 40 yards.

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; slow.....	Spanish, at Havana.	None	Hampton Rds., Key West, New Orleans, <i>Havana</i> , Cardenas, San Juan, St. Thomas.	Total importation of coal at Matanzas during 1890 amounted to 57,000 tons, of which 40,000 tons came from U. S. Duty on coal was raised July, 1890, from 57c. to \$1.72 per ton.
By lighters, or alongside wharves; 400 tons per day. Storms and heavy rains, June to October, may interrupt.	Spanish.....	None	Hampton Rds., Key West, New Orleans, <i>Matanzas</i> , San Juan, St. Thomas, Kingston, Colon.	Total importation of coal at Havana for the year 1890, amounted to 180,000 tons, of which about 120,000 came from U. S.
By large lighters; 200 tons per day; seldom interrupted; some liability to interruption in September and October. Small vessels coal at wharves; no interruption.	None	None	New Orleans, Key West, <i>Havana</i> , <i>Trinidad</i> , Santiago, Kingston, Colon.	Of 29,000 tons of coal imported during year ending June 30, 1890, 20,000 tons came from U. S., and 9,000 from Great Britain. Coal freights from U. S., \$2.00 to \$2.50; from Great Britain, \$2.07 to \$2.43; duty 72c. per ton.
Vessels of light draught at wharf; rapid; large vessels at anchorage, by lighters; occasional delays according to wind; liable to interruption, Sept. and Oct.	Spanish, at Casilda; about 500 tons bituminous (American).	None	New Orleans, Key West, <i>Havana</i> , <i>Cienfuegos</i> , Santiago, Kingston, Colon.	Port known as Port Casilda; city distant, 3 miles.
By lighters and tugs; rapid; no interruption.	None	None. Deposits in vicinity unworked.	<i>Havana</i> , Cienfuegos, Trinidad, <i>Port Antonio</i> , Kingston, Colon. San Juan, St. Thomas, St. Lucia.	American coal, brought to Santiago by the steamers employed in carrying ore mined by the Juragua Iron Co. to the U. S., is now laid down so cheaply that coal from Great Britain can not compete.
Alongside wharf; by baskets.	British, at Port Royal.	None	Cienfuegos, Santiago, <i>Port Morant</i> , Port Royal or Kingston, Colon.	Coal pile newly established by Boston Fruit Co. A supply of 1,000 tons, Cumberland or Cardiff, to be maintained.
.....	British, at Port Royal.	None	Cienfuegos, Santiago, Port Antonio, <i>Port Royal</i> or Kingston, Colon.	Coal pile newly established by Boston Fruit Co. A supply of 1,000 tons, Cumberland or Cardiff, to be maintained.
Alongside wharf, or by lighters; 150 tons per day; stowed by natives; occasional delays.	British, at dockyard.	None	Cienfuegos, Santiago, <i>Port Morant</i> , Colon, San Juan, St. Thomas, St. Lucia.	All coal is property of British Govt., furnished to naval vessels by courtesy.
At wharves, 25 to 30 ft. alongside, by baskets of 80 lbs. capacity; 150 to 200 tons per day; no interruption; or alongside a newly arrived coal ship.	British, at Port Royal.	None	As for Port Royal.	Of coal at Kingston, about 7,500 tons belong to Royal Mail S. S. Co., who do not sell, except in emergency, or when supply can not be obtained from regular dealers.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Port-au-Prince, Hayti.	Dec., 1890.	Cardiff..... Lancashire.... American.....		Small supply for Government use and for Haytian coasters; sold only as a matter of accommodation.	\$12.00 to \$14.00.	.....
Gonaives, Hayti.	Dec., 1889.	.....		Small supply for Haytian coasters.	.....	$\frac{3}{4}$ mile to anchorage in 33 fathoms.
Mole St. Nicolas, Hayti.	Apr., 1889.	None.....	None.....	.....	.....	.....
Cape Haytien, Hayti.	May, 1889.	Bituminous..... (from U. S.)		Small supply; property of Clyde S. S. Co.	About \$10.00.	About $\frac{1}{2}$ mile, for vessels of 18 feet draught.
Puerto Plata, San Domingo.	Sept., 1890.	None.....	None.....	None.....	.....	.....
Samana, San Domingo.	Oct., 1883.	None for sale...		Small supply for Clyde steamers.	.....	40 feet.....
San Domingo, San Domingo.	Sept., 1883.	.....		A few hundred tons, for Clyde steamers.	.....	.....
Ponce, Porto Rico.	.....	.....		.....	.....	.....
Mayaguez, Porto Rico.	Feb., 1886.	None.....	None.....	None.....	.....	.....
San Juan, Porto Rico.	Dec., 1890.	Bituminous: Clearfield..... (Berwind-White Enreka). Cardiff.....	2,200 600	3,000 to 6,000	\$11.50, Mexican. \$11.50, Mexican.	At wharf, 50 feet; at anchorage in harbor, 2 to 3 cables.
St. Thomas, D. W. I.	Jan., 1887.	Anthracite..... Bituminous: Cardiff..... Cumberland.... Newcastle..... Scotch..... German.....	600 2,500 450 600 450 250	5,000 to 7,500, exclusive of that owned by S. S. companies.	\$8.00, \$7.50 to \$8.00, \$7.50, \$6.75, \$7.50, \$7.00,	.....
	Apr., 1888.	New River.....			\$5.88, on wharf.	.....
	1891.	Cardiff (Cory's Merthyr)			\$7.54, on wharf; Austrian Govt. contract, for the year.	.....
	Oct., 1891.	Cardiff.....			\$8.00, stowed, at wharf.	.....
	1892.	Cardiff.....			\$7.30, stowed, at wharf; \$7.54, alongside; \$7.79, stowed, in harbor; German Govt. contract to April, 1893.	.....

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>itiner.</i>)	Remarks.
By lighters.....	Haytian, on Fort Isle; small supply.	None	Key West, <i>Santiago</i> , Port Antonio, Port Morant, Kingston.	Steamers never coal here except in case of necessity. Duty on coal, \$4.10 per ton.
By lighters.....	Haytian, at Port-au-Prince; small supply.	None	As for Port-au-Prince.	
.....	None	None	As for Port-au-Prince.	
By lighters.....	None	None	Kingston, <i>Santiago</i> , San Juan, St. Thomas.	The coaling station once maintained by the U. S. Government at this port was sold in 1873.
.....	None	None	As for Cape Haytien.	No coal used at this port for any purpose.
At wharf, when coal is obtainable; by baskets; rapid; no interruption.	None	None	<i>San Juan</i> , St. Thomas, St. Lucia.	
By lighters, when coal is obtainable; liable to interruption, August to November.	None	None	Kingston, <i>San Juan</i> , St. Thomas, St. Lucia.	
.....	None	None	As for San Domingo.	
.....	None	None	As for San Domingo.	
Vessels of 23 ft. draught at coal wharf; rapid; no interruption; or in harbor by lighters; 300 tons per day.	None	None	Key West, Havana, Kingston, Colon, Curaçao, <i>St. Thomas</i> , Martinique, St. Lucia, Barbadoes, Port-of-Spain.	Total importation of coal for Porto Rico, 1890, amounted to 22,200 tons; of which 11,400 came from Gt. Britain, 10,000 from U. S., and 700 from Nova Scotia.
Alongside wharf, for vessels not exceeding 25 ft. draught; by staging from pier, for vessels of 30 ft. draught; 60 tons per hour, or as rapidly as coal can be stowed; by lighters, if preferred, at an advanced price; no interruption, except possibly by hurricanes, August to November.	French, at Martinique; also, small supply at Guadeloupe; British, at St. Lucia.	None	Hampton Rds., Bermuda, Key West, Havana, Kingston, Colon, Curaçao, <i>San Juan</i> , Martinique, St. Lucia, Barbadoes, Port-of-Spain, Demerara, Para, Porto Grande, Teneriffe, Madeira.	Coaling depots are maintained at St. Thomas by the Compagnie Générale Transatlantique, the Royal Mail Steam Packet Company, and the Hamburg-American Packet Company, each keeping about 4,000 to 5,000 tons on hand.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost. per ton.	Distance from coal pile to ship.
Fredericksted. Santa Cruz. D. W. I.	Dec. 1885.	Cardiff..... (Kept for sale to the sugar works.)		500 Supply not to be depended upon.	\$8.00 to \$9.00, at pile.	
Christiansted, Santa Cruz. D. W. I.	Dec. 1885.	Cardiff..... (Sold only to accommodate.)		600 (at sugar factory).	\$8.00 to \$9.00; lighterage, per ton, extra, \$1.00 to \$2.00.	
Anguilla, B. W. I.	Sept. 1883.	None	None	None		
Basseterre, St. Christopher, B. W. I.	Feb., 1888.	None	None	Never as much as 100 tons.		
Charlestown, Nevis, B. W. I.	Sept., 1883.	None	None	None		
St. John's, Antigua, B. W. I.	Oct., 1890.	Bituminous..... (Gt. Britain)		1,000 tons imported per year.	\$7.80 to \$8.50, at pile.	1½ miles to roads; ½ mile for vessels of 12 ft. draught; dredging in progress.
	Dec., 1891.	Cardiff..... Patent fuel	} 125	125		
English Harbor, Antigua, B. W. I.	Sept., 1883.	Patent fuel	400	400		
	Dec., 1891.	None	None	None		
Pointe-à-Pitre, Guadeloupe, F. W. I.	Feb., 1888.	Newcastle	400 to 500	400 to 500	About \$8.00; lighterage, per ton, 80c.	About ½ mile for vessels of 26 ft. draught; vessels of 15 ft. draught can go to wharves.
Portsmouth, Dominica, B. W. I.						
Roseau, Dominica, B. W. I.						
St. Pierre, Martinique, F. W. I.	Dec., 1891.	None for sale ...	No supply for steamers; all coal imported is for use of sugar works.			
Fort-de-France, Martinique, F. W. I.	Jan., 1887.	Cardiff.....	10,000; exclusive of Govt. supply.	10,000; to be increased to 20,000.	\$9.00, delivered; furnished at cost (\$5.00) to U. S. naval vessels by courtesy of the company; delivery per ton, ship at wharf, 15c.	100 feet, maximum, for vessels at wharf, in basin of Cie. Gén. Trans.
	Dec., 1890.	Cardiff.....		12,000	\$8.10, on wharf; lighterage, per ton, 80c.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters.....	As for St. Thomas.	None	San Juan, <i>St. Thomas</i> , Martinique, <i>St. Lucia</i> .	
By lighters.....	As for St. Thomas.	None	As for Fred-ericksted.	
.....	As for St. Thomas.	None	As for Fred-ericksted.	
By lighters when coal is obtainable; in hog-heads. Delivery costs \$1.25 to \$1.50 per ton.	As for St. Thomas.	None	As for Fred-ericksted.	
.....	As for St. Thomas.	None	As for Fred-ericksted.	
By sailing lighters; moder-ately rapid; rarely interrupted.	As for St. Thomas.	None	San Juan, <i>St. Thomas</i> , <i>Guadeloupe</i> , Martinique, <i>St. Lucia</i> , Barbadoes, <i>Port-of-Spain</i> .	
Vessels not exceeding 17 ft. draught can go alongside wharf at dockyard.	British, at dockyard; supply no longer maintained, 1891.	None	As for St. John's.	The British dockyard is practically abandoned, 1891; build-ings, in charge of a care-taker, remain in good condition.
By lighters, in capacity up to 50 tons.	French, at Fouillol Point; 300 to 400 tons.	None	San Juan, <i>St. Thomas</i> , <i>Martinique</i> , <i>St. Lucia</i> , Barbadoes, <i>Port-of-Spain</i> .	About 20,000 tons of coal per year are im-ported for the use of the sugar factory and mechanical establish-ment of E. Souques & Cie. (Usine d'Arbons-ier).
.....	French, at Martinique; British, at <i>St. Lucia</i> .	None	As for Pointe-à-Pitre.	
.....	As for Ports-mouth.	None	As for Pointe-à-Pitre.	
.....	French, at Fort-de-France.	None	As for Pointe-à-Pitre.	Total importation per year to Martinique, principally entering at Fort-de-France, amounts to about 70,000 tons, two-thirds from Great Britain, one-third from United States and Nova Scotia.
At wharf in basin of Cie. Gén. Trans.; available for vessels of 29 feet draught; rapid; no in-terruption; electric light for night work; or by lighters in har-bor, if preferred.	French, at dockyard; 2,000 to 4,000 tons, pa-tent fuel.	None	Colon, Kingston, Curaçao, San Juan; <i>St. Thomas</i> , <i>St. Lucia</i> , Barbadoes, <i>Port-of-Spain</i> , Demerara, Para, Porto Grande, Tenerife, Madeira.	Large coaling depot, es-tablished by the Com-pagnie Générale Trans-atlantique.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Port Castries, St. Lucia, B. W. I.	Nov., 1891.	Cardiff: Harris's Deep Navigation. Ferndale	10,000	10,000	\$7.54, stowed, current price during year; \$7.06, stowed, price at date; \$6.33, price to British naval vessels.	About 20 to 40 yards.
		Cory's Merthyr					3,000	2,500	$7.54, stowed, current price during year; $7.54, Aus- trian Govt. contract for the year; $6.81, stowed, price at date. $5.98, stowed.
		Clearfield (Ber- wind - White Eureka). Cumberland	900	.....	.....
		Pocahontas	1,000	.....	\$5.84, stowed.	
Kingstown, St. Vincent, B. W. I.	June, 1891.	None	No supply for steamers; total importation, 1890, amounted to 105 tons.		.....	.....
Bridgetown, Barbadoes, B. W. I.	May, 1890.	Cardiff (Cory's Merthyr)	2,500	2,000 to 3,000	\$8.04, stowed.	½ mile
	1891.	Cardiff (Cory's Merthyr)	.....	.....	\$8.27, alongside; Austrian Govt. contract for the year.	
	June, 1891.	Cardiff .....	.....	(About 20,000 tons im- ported per year.)	\$8.00 to \$9.00.	
	1892.	Cardiff .....	.....				$7.30, alongside; $7.54, stowed; German Govt. contract to April, 1893.
St. George, Grenada, B. W. I.	1884.	Bituminous	Small supply for Royal Mail steamers.		.....	.....
Port of Spain, Trinidad, B. W. I.	Feb., 1887.	Cardiff	2,000	2,000	\$11.00.	.....
	Nov., 1890.	Crown Patent Fuel (Cardiff)	.....	20,000 tons im- ported, 1889.	\$6.50, cost to importer.	.....
		Bituminous: Cardiff .....	.....	13,000 tons im- ported, 1889.	\$6.00, cost to importer.	
Pocahontas .....	.....	1,000 tons im- ported, 1889.	\$5.50, cost to importer.			
Georgetown, Demerara, British Guiana.	Sept., 1884.	Cardiff	6,000	10,000	\$7.50 to \$10.00, stowed.	50 yards
	Jan., 1891.	Patent fuel	3,000			
		Bituminous: Great Britain. Pennsylvania.	98,000 tons imported, 1889. 500 tons imported for trial, 1890.		\$5.50 to \$7.75, cost to im- porter.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
At northern coal wharf, 27 feet alongside at L. W.; western coal wharf under construction has 22 feet alongside; coal carried on board in baskets on heads of negroes; rapid, 60 tons per hour, with clear bunkers; no interruption; vessels coaled by lighters in harbor if preferred, at an additional cost of 25 cents per ton.	British, 4,000 to 5,000 tons by contract with Barnard, Peter & Co.	None.....	Hampton Rds, Bermuda, Key West, Havana, Kingston, Colon, Curaçao, San Juan, St. Thomas, <i>Martinique</i> , Barbadoes, Port-of-Spain, Demerara, Para, Porto Grande, Teneriffe, <i>Madeira</i> .	Of the supply at this port the stock belonging to the Royal Mail Steam Packet Co., varying in amount at different times from 3,000 to 7,000 tons, is not for sale. At date of report this stock was at its minimum, 3,000 tons. There are usually at least 10,000 tons in the hands of the three coal-dealing firms. Barnard, Peter & Co., the British Admiralty contractors, are required to maintain a stock of at least 4,000 tons at all times.
By lighters of 25 tons capacity; rapid, 50 tons per hour; strong sea breeze sometimes occasions delays; no interruption as a rule.	Martinique, St. Lucia, Barbadoes.	None.....	Martinique, <i>St. Lucia</i> , Barbadoes, Port-of-Spain.	Duty on coal, 60 cents per ton.
By lighters, when coal is obtainable.	None on the island.	None.....	St. Lucia, Barbadoes, <i>Port-of-Spain</i> .	
From hulk <i>Ripon</i> , moored in 16 feet of water, alongside or by lighters.	British, at Commissariat Wharf; about 400 tons.	None.....	Colon, Kingston, Curaçao, San Juan, St. Thomas, Martinique, St. Lucia, <i>Barbadoes</i> , Demerara, Paramaribo, Para.	Coal is imported without duty.
Alongside wharf, or by baskets from punts; or from hulk; moderately rapid; no interruption.	None.....	None.....	San Juan, St. Thomas, Martinique, St. Lucia, Curaçao, Barbadoes, Port-of-Spain, <i>Paramaribo</i> , Para.	No regular coal dealers in colony, consumers usually importing for their own use; demand is chiefly for the supply of the sugar estates, and to a less extent for that of the colonial steamers, the railway, and a few small manufactories.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following North Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Paramaribo, Dutch Guiana.	Aug., 1884.	Cardiff.....	Sufficient for use of Government vessels and of steamers of Dutch Royal Mail Co. to Amsterdam.		\$10.00 to \$12.00, at pile; delivery and stowing, per ton, \$1.00.	100 yards from pile to wharf.
Cayenne, French Guiana.	1888.					6 miles, for vessels exceeding 14 ft. draught.
Para, Brazil.	Oct., 1883.	Cardiff..... Scotch.....	5,000	5,000	\$12.00, f. o. b.	½ mile.....
	Oct., 1890.	Cardiff.....			\$8.51, cost to importer.	

Exhibit of coal to be had at the following South Atlantic Station

Maranhão, Brazil.	Jan., 1884.	Cardiff.....	500	500 to 2,000	\$12.00, ton of 40 cubic feet.	1 mile.....
Ceara, Brazil.	1884.	Cardiff.....	200	225	\$11.05 to \$13.66; delivery, per ton, \$1.00.	½ mile if inside reef; if outside, 1 mile.
Pernambuco, Brazil.	Oct., 1890.	Cardiff: Nixon's Nav'n. Cory's Merthyr Ocean Merthyr Patent fuel Lancashire..... Newcastle..... Westphalian.....	Large supply. Ample supply.	66,000 tons imported per year; never less than 6,000 tons on hand.	According to quality; \$10.92 to \$15.28, stowed; cost to vessels outside reef slightly greater than inside.	½ mile if inside reef; if outside, 1 mile.
Bahia, Brazil.	Oct., 1890.	Cardiff: Ocean Merthyr Harris's Nav'n. Penrikyber.... Nutt's Nav'n.. Cory's Merthyr	8,500 3,000	6,000 3,000	\$12.21, f. o. b., \$12.65, stowed.	1 to 3 miles ..
		1891.	Cory's Merthyr	3,000	15,000 tons imported per year.	
	Nov., 1891.	Cory's Merthyr Penrikyber....			\$12.17, stowed.	
Rio de Janeiro, Brazil.	July, 1890.	Cardiff..... Scotch..... Newcastle.....	53,000	35,000	\$10.95 to \$12.65.	2 to 3 miles ..
	1891.	Cardiff (Cory's Merthyr)			\$11.44, f. o. b., Austrian Govt. contract for the year.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
Mail steamers coal at wharf, 15 ft. alongside at L. W., gunboats by lighters; slow; no interruption.	.....	None	Martinique, St. Lucia, Curaçao, Barbadoes, Port-of-Spain, <i>Demerara</i> , Para.	
.....	French Government depot.	None	As for Paramaribo.	
By lighters and small baskets; slow; seldom interrupted.	None	None	St. Lucia, Barbadoes, Port-of-Spain, <i>Demerara</i> , <i>Maranham</i> , Pernambuco.	

ports, together with the usual supply on hand, cost, etc.

By lighters of 50 tons capacity; coal corded in rectangular piles to facilitate measurement; slow.	None	None	St. Lucia, Barbadoes, Port of Spain, <i>Demerara</i> , <i>Para</i> , Pernambuco.	
In sacks, from jungadas of 1½ to 2 tons capacity; slow.	None	None	<i>Demerara</i> , <i>Para</i> , <i>Maranham</i> , Pernambuco, Bahia.	
By lighters of about 65 tons capacity; about 20 tons per hour; liable to interruption at outer anchorage.	None	None	St. Lucia, Barbadoes, Port-of-Spain, <i>Demerara</i> , <i>Para</i> , <i>Maranham</i> , Porto Grande, Dakar, St. Helena, <i>Bahia</i> , Rio de Janeiro, Montevideo.	Import duty of 7 per cent., in force at date of report; since removed, 1891.
By baskets, from lighters of 20 to 50 tons capacity; negro labor; 20 to 25 tons per hour; southerly gales may interrupt, April to August; no interruption, as a rule.	British, German, and Austrian contracts; the British contract requires a minimum supply of 3,000 tons (Cardiff) maintained at all times.	None	St. Lucia, Barbadoes, Port-of-Spain, <i>Demerara</i> , <i>Para</i> , Porto Grande, Dakar, St. Helena, <i>Pernambuco</i> , Rio de Janeiro, Montevideo, Ensenada, Buenos Ayres, Port Stanley, Sandy Point.	Total importation of coal at Bahia amounts to about 65,000 tons per year. There are two coal-dealing firms; about 1,000 tons are kept in lighters at all times, ready for immediate delivery. Contracts should stipulate that coal is to be weighed.
By baskets from lighters; about 30 tons per hour; seldom interrupted.	None, except by contract.	None	<i>Para</i> , Porto Grande, Dakar, St. Helena, Pernambuco, Bahia, <i>Santos</i> , Montevideo, Ensenada, Buenos Ayres, Port Stanley, Sandy Point.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following South Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Santos, Brazil.	Nov., 1886.	Cardiff.....	} 1,000	} 1,000	} Prices about same as at Rio de Janeiro.	} ½ mile to 1 mile.
		Newcastle.....				
Desterro, St. Catherine's Id., Brazil.	July, 1885.	Cardiff.....	700	Not to be depended upon; 500 to 1,500 tons.	About \$18.50, delivered.	.....
Rio Grande do Sul, Brazil.	Dec., 1890.	Cardiff.....	.....	About 4,000 tons imported per year.	.....	.....
		Patent fuel.....	.....	About 2,500 tons per year imported for use of R. R.	\$11.00 to \$15.00, cost to R. R. company.	.....
Maldonado, Uruguay.	Dec., 1891.	None.....	None.....	None.....	.....	.....
Montevideo, Uruguay.	Nov., 1890.	Cardiff.....	20,000	} 25,000	\$12.00 to \$13.00, alongside.	1½ miles.....
		Newcastle.....	1,000			
		Scotch.....	2,000			
	1891.	Cardiff (Cory's Merthyr)	.....	.....	\$11.44, f. o. b.; Austrian Govt. contract for the year.	.....
	Nov., 1891.	Cardiff (Cory's Merthyr)	.....	.....	\$12.94, alongside.	.....
Jan., 1892.	Cardiff.....	.....	.....	\$9.36, alongside.	.....
Colonia, Uruguay.	May, 1885.	None.....	None.....	None.....	.....	.....
Fray Bentos, Uruguay.	Sept., 1889.	Cardiff.....	7,000	6,000 to 9,000	\$17.68.	200 yards.....
	June, 1892.	Cardiff (Nixon's Navigation)	.....	.....	\$15.00.	.....
Paysandu, Uruguay.	Sept., 1887.	Cardiff.....	300	50 to 200	\$13.52.	.....
San Pedro, Argentina.	July, 1892.	Cardiff.....	400	} 300	} Variable; from \$9.50 to \$15.50.	.....
		Cumberland.....	100			
San Pedro, Argentina.	Aug., 1888.	None.....	.....	.....	.....	.....
San Nicolas, Argentina.	Aug., 1888.	None.....	None.....	No regular supply.	.....	.....
Rosario, Argentina.	Oct., 1887.	Cardiff.....	1,000	1,200	\$11.00 to \$16.00, delivered.	Hulk 600 ft. from usual anchorage.
	June, 1892.	English.....	Temporarily, none.	500	\$10.50, alongside coal hulk.	.....
Santa Elena, Argentina.	June, 1889.	Cardiff.....	500	500	\$18.20, f. o. b.	.....
La Paz, Argentina.	June, 1889.	None.....	None.....	.....	.....	.....
Corrientes, Argentina.	June, 1889.	None.....	None.....	.....	.....	.....

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
By lighters; or from coal hulk brought alongside.	None	None	Bahia, <i>Rio de Janeiro</i> , <i>Montevideo</i> .	
By lighters and small baskets, when coal is obtainable; liable to interruption by high winds, July to September.	None	None	<i>Rio de Janeiro</i> , <i>Santos</i> , <i>Montevideo</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> .	No regular dealer. Coal is kept for use of <i>Lamport & Holt</i> steamers, and those of <i>Brazilian</i> coast line; for sale only when stock on hand is large.
Not available for vessels exceeding 12 feet draught, on account of bar, 7 miles from town; improvement works in progress, 1891.	None	San Jeronimo mines, 50 miles west of <i>Porto Alegre</i> ; bituminous of poor quality; output, 8,000 tons per year.	<i>Rio de Janeiro</i> , <i>Santos</i> , <i>Montevideo</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> .	Coal freights from Great Britain (1890), \$7.91 to \$11.68 per ton.
No facilities; coal may be obtained from <i>Montevideo</i> upon telegraphic order; towed down in lighters; expensive.	None	None	<i>Rio de Janeiro</i> , <i>Santos</i> , <i>Montevideo</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> .	Concession granted to a company, 1891, to build wet docks, and establish a coaling station at this port.
By large lighters; coal hoisted on board in bags; rapid in good weather; liable to interruption by pampers, especially during winter months, June to September.	None	None	<i>Pernambuco</i> , <i>Bahia</i> , <i>Rio de Janeiro</i> , <i>Santos</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> , <i>Rosario</i> , <i>Paysandu</i> , <i>Port Stanley</i> , <i>Sandy Point</i> .	Importation of coal at <i>Montevideo</i> , during 1889, amounted to 453,700 tons, of which 385,700 tons came from <i>Cardiff</i> . Coal freights from Great Britain, November, 1890, \$5.35 per ton. It is often cheaper for steamers entering the <i>River Plate</i> to coal in docks at <i>Ensenada</i> or <i>Buenos Ayres</i> .
.....	None	None	<i>Montevideo</i> , <i>Buenos Ayres</i> .	
At wharf; 16 to 18 feet alongside; narrow-gauge railway from coal pile to wharf; rapid; no interruption.	None	None	<i>Montevideo</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> , <i>Paysandu</i> .	Coal is property of <i>Liebig Meat Extract Co.</i> , and is sold only as a matter of accommodation.
By lighters; 50 tons per day; no interruption; vessels of light draught at wharf.	None	None	<i>Fray Bentos</i> , <i>Buenos Ayres</i> , <i>Ensenada</i> , <i>Montevideo</i> .	
.....	None	None	<i>Buenos Ayres</i> , <i>Rosario</i> .	
.....	None	None	<i>Buenos Ayres</i> , <i>Rosario</i> .	
Alongside hulk; rapid; lighters may be hired, but none are owned by coal dealers.	None	None	<i>Montevideo</i> , <i>Ensenada</i> , <i>Buenos Ayres</i> , <i>Santa Elena</i> .	
Alongside wharf	None	None	<i>Rosario</i> , <i>Buenos Ayres</i> , <i>Ensenada</i> , <i>Montevideo</i> .	Coal is property of <i>Kemperich Co.</i> , for use in the <i>saladero</i> ; sold only to accommodate.
.....	None	None	<i>Santa Elena</i> , <i>Rosario</i> .	
.....	None	None	<i>Santa Elena</i> , <i>Rosario</i> .	

Exhibit of coal to be had at the following South Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Asuncion, Paraguay.	May, 1889.	Cardiff	None	Usually a small supply.	\$20.00.	.....
Buenos Ayres, Argentina.	Nov., 1890.	Cardiff.....	.....	380,000 tons imported, 1889.	\$13.62, stowed, average cost to vessels in roads.	For vessels anchored in roads, about 5 miles; in docks, short.
		Newcastle .....	.....	125,000 tons imported, 1889.		
		Scotch .....	.....	.....
	Oct., 1891.	Cardiff (Cory's Merthyr)	.....	.....	\$9.32, in docks.	.....
Ensenada, Argentina.	Mar., 1892.	Cardiff	7,000	10,000 to 20,000.	\$9.50, at wharf, in docks.	.....
Bahia Blanca, Argentina.	Apr., 1884.	None for sale ...	.....	Considerable supply, imported from Great Britain by Great Southern Ry. Co., for own use.	\$10.50, cost to importer.	.....
Port Stanley, Falkland Ids.	Jan., 1887.	Cardiff	4,000	500	\$12.17, in bulk.	About $\frac{1}{2}$ mile, hulk to anchorage.
Ascension Island.	Mar., 1890.	Cardiff..... West Hartley... Patent fuel	4,000	4,000	By courtesy, at cost, to naval vessels.	.....
Jamestown, St. Helena.	Mar., 1890.	Cardiff.....	1,200	1,000, exclusive of Government supply.	\$17.03, alongside.	Coal pile 200 yards from jetty.
	Dec., 1891.	Bituminous (not specified)	.....	.....	\$13.38, f. o. b.	.....
St. Paul de Loanda, West Africa.	Jan., 1890.	Cardiff.....	2,000	2,000	\$14.60.	200 to 2,000 yds., according to anchorage.
	June, 1892.	Cardiff.....	.....	.....	\$12.17, alongside; \$12.66, stowed.	.....
Mossamedes, West Africa.	June, 1892.	Cardiff.....	.....	Supply maintained for cable steamers; usually sold to accommodate.	\$17.03.	.....
Cape Town, Cape Colony.	Jan., 1890.	Cardiff.....	Large supply.	25,000, in hands of dealers.	\$12.89 to \$13.87, alongside.	$\frac{3}{4}$ mile to anchorage in Table Bay.
	1891.	Cardiff (Cory's Merthyr)	.....	.....	\$12.77, alongside, Alfred Docks; \$13.38, alongside, Table Bay; Austrian Govt. contract for the year.	
	1892.	Cardiff.....	.....	.....	\$11.56, alongside, \$11.92, stowed, Alfred Docks; \$12.17, alongside, \$12.53, stowed, Table Bay; German Govt. contract, to April, 1893.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
Alongside wharf.....	None	None	<i>Santa Elena</i> , Rosario, Buenos Ayres.	
By lighters at anchorage in roads; about 100 tons per day; liable to interruption; or at wharf in docks; passed on board in baskets; rapid; no interruption.	None	None	Pernambuco, Bahia, Rio de Janeiro, Santos, Montevideo, <i>Ensenada</i> , Paysandu, Rosario, Port Stanley, Sandy Point.	Docks already completed at Buenos Ayres are available for vessels of 214 feet draught; those at Ensenada for vessels of the largest size. Coal freights from Gt. Britain to Buenos Ayres, 1889, averaged \$7.94 per ton.
In docks, always available for vessels of 22½ ft. draught; by lighters or at wharf; rapid; three ships can obtain 800 tons each in two days; no interruption.	None	None	<i>Buenos Ayres</i> , and as for Buenos Ayres.	Port of city of La Plata.
At wharf; minimum depth alongside, 23 feet at L. W. (1891).	None	None	Buenos Ayres, <i>Montevideo</i> , Port Stanley, Sandy Point.	
Alongside hulk, 200 tons in 24 hours; or by small lighters from hulk, in bags; all work by ship's crew; liable to interruption by weather.	British, by contract with the Falkland Islands Co.	None	Rio de Janeiro, Montevideo, Buenos Ayres, <i>Sandy Point</i> , Lota, Valparaiso.	Unusual supply at date of report, due to arrival of 3,500 tons in a vessel which put in in distress, and was kept for use as a coal hulk.
By lighters of 10 tons capacity; rapid; liable to interruption by heavy rollers.	British	None	Pernambuco, Porto Grande, Elnuina, <i>St. Helena</i> , Loanda.	All coal is property of British Government; sold only to accommodate, and in smallest quantities necessary.
By bags from lighters of 9 tons capacity; usually practicable on smooth side only; 100 tons in 12 hours; liable to interruption by heavy rollers, January and February.	British	None	Rio de Janeiro, Pernambuco, Porto Grande, Dakar, <i>Ascension</i> , Fernando Po, Loanda, Cape Town.	
By baskets, from lighters of 30 tons capacity; 200 tons in 24 hours; seldom interrupted.	Portuguese; small supply.	None	Fernando Po, <i>Banana</i> , Mossamedes, St. Helena, Cape Town.	Best coaling port of West Africa to southward of the equator.
Alongside hulk maintained by Eastern and So. African Telegraph Co.	None	None	St. Helena, <i>Loanda</i> , Cape Town.	
At coaling jetty, 28 feet alongside; very rapid; no interruption; or by lighters, of 6 tons capacity, at anchorage; coal in bags, about 300 pounds each; 25 tons per hour; seldom interrupted.	British, at Simon's Town.	None	Fernando Po, <i>Banana</i> , St. Helena, Loanda, Mossamedes, <i>Simon's Town</i> , P. Elizabeth, East London, Durban, Mozambique, Zanzibar, Mauritius.	In addition to coal supply in hands of dealers, depots are maintained by both the Castle and the Union S. S. lines.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following South Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Simon's Town, Cape Colony.	1884.	Cardiff..... Newcastle.....	1,000	1,500	\$14.40, alongside.	About 400 yards.
			Exclusive of Govt. supply.			
Mossel Bay, Cape Colony.	1883.	English.....	100	100	\$18.00, f. o. b.	
Port Elizabeth, Cape Colony.	July, 1887.	Cardiff..... Colonial.....	Large supply.		\$12.17, alongside. \$3.89 to \$6.08, at pile.	½ mile.....
East London, Cape Colony.	Feb., 1886.	Colonial: Cyphergat.... Molteno..... Fairview..... Indwe.....	Considerable supply.		\$3.89, at pile. \$6.08, at pile.	
Durban, Natal, South Africa.	July, 1887.	Welsh..... English..... Australian.....	Considerable supply.		\$17.00, alongside.	
Lorenzo Marquez, Delagoa Bay, South Africa.	Jan., 1891.	Welsh.....	10,000 tons imported, 1890.			
Mozambique, Mozambique.	Jan., 1891.	Welsh: Ocean Merthyr..... Ferndale.....	800 to 3,000		Varies from \$15.81 to \$19.46, f. o. b., accord- ing to supply.	¼ to ½ mile ...
Zanzibar, East Africa.	Aug., 1889.	Welsh.....	14,000	8,000	\$15.63, f. o. b.	About ¼ mile
	1891.	Welsh (Cory's Merthyr)			\$13.38, alongside; Austrian Gov- ernment con- tract for the year.	
	1892.	Welsh.....			\$10.83, alongside; \$10.95 stowed; German Gov- ernment con- tract to April, 1893.	

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By iron lighters from private dealers, or by sailing boats of 8 tons capacity from dockyard; rapid in fine weather; 100 to 250 tons per day, according to circumstances; seldom interrupted.	British, at dockyard; about 10,000 tons, chiefly Cardiff; one-third Newcastle.	None	St. Helena, Loanda, Mossamedes, <i>Cape Town</i> , P. Elizabeth, Durban, Mozambique, Zanzibar, Mauritius.	
By lighters; liable to interruption by S. E. gales, September to April.	None	None	Cape Town, Simon's Town, P. Elizabeth.	
In bags, by lighters of 30 to 60 tons capacity; about 200 tons per day; liable to interruption by S. E. gales, September to April.	None	None nearer than Stormberg Mts.	St. Helena, Loanda, Cape Town, Simon's Town, <i>East London</i> , Durban, Mozambique, Zanzibar, Mauritius.	Vessels of 15 feet draught can be taken alongside the jetties, of which there are two; one of these is being extended (1891) to 21 feet alongside at L. W.
By lighters and tugs; vessels roll considerably at anchorage; liable to interruption; vessels of 15½ feet draught can enter river and lie at wharves; river channel being deepened, 1891.	None	At Cyphergat and Moltene, in Stormberg Mts., about 220 miles distant by rail, 1,300 tons per month; and on Indwe River, in Wodehouse district, about 200 miles from East London, 500 tons per month, 1886.	Cape Town, Simon's Town, P. Elizabeth, Durban, Mozambique.	Colonial coal contains much dross, but is in use throughout Eastern System of colonial railways. Indwe coal is the best and commands highest price. A subsidy was granted in 1886 for rail connection from Indwe mines to main line of Eastern System.
By lighters from the coal hulks; about 100 tons per day in fine weather; bad place to coal on account of heavy swell; liable to interruption.	None	Deposits at Newcastle, Natal, about 150 miles distant; to be developed.	Cape Town, Simon's Town, P. Elizabeth, <i>East London</i> , Delagoa Bay, Mozambique.	1892.—Steamers coaling here now usually take Natal coal; Dundee mine is reported to be the best; output, 10,000 tons per month.
By lighters.....	None	None; deposits in district, not worked.	P. Elizabeth, Durban, Mozambique.	
By lighters of 30 tons capacity; 150 tons in 24 hours; when anchored outside harbor, lighters must be towed by ship's boats; coaling not practicable outside Fort St. Sebastian with wind from Sd. and Ed.; no interruption inside.	None in immediate vicinity; French at Mayotte and Nossi Bé.	None; deposits inland, not worked.	Cape Town, Simon's Town, P. Elizabeth, Durban, Delagoa Bay, <i>Mayotte</i> , Nossi Bé, Zanzibar, Mahé, Aden.	Total importation of coal per year amounts to about 6,000 tons.
By lighters; moderately rapid; 300 tons in 24 hours when large lighters are used; seldom interrupted.	British; 5,000 tons.	None	Cape Town, Simon's Town, P. Elizabeth, Delagoa Bay, Durban, Mozambique, <i>Mayotte</i> , Nossi Bé, Réunion, Mauritius, Mahé, Colombo, Aden.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following South Atlantic Station

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Johanna, Comoro Ids.	Mar., 1887.	None	None ...	None		
Mayotte, Comoro Ids.	Sept., 1885.	Patent fuel	500	500	\$14.96.	$\frac{1}{2}$ mile.....
Halleville, Nossi Bé, Madagascar.	Apr., 1886.	Patent fuel	2,000	2,000	At cost; \$12.10, alongside, by courtesy.	$\frac{1}{2}$ to $\frac{1}{4}$ mile ...
Majunga, Madagascar.	Mar., 1887.	None	None ...			
Mourandava, Madagascar.	Feb., 1884.	None	None ...	None		
Tullear, Madagascar.	Mar., 1886.	None	None ...	None		
Tamatave, Madagascar.	July, 1889.	Cardiff	200	200	\$12.65.	1 mile.....
Ste. Marie, Madagascar.	Apr., 1887.	Patent fuel		6,000	At cost; \$14.66, alongside, by courtesy.	$\frac{1}{2}$ mile.....
Diego Suarez, Madagascar.	Apr., 1889.	None, except French Govern- ment sup- ply.				
St. Denis, and Pointe des Galets, Réunion.	1891.					
St. Pierre, Réunion.						
Port Louis, Mauritius.	May, 1887.	Cardiff		6,000	\$10.58.	$\frac{1}{2}$ to $\frac{1}{4}$ mile....
		Australian				
	1891.	Cardiff (Cory's Morthyr)				
	1892.	Cardiff.....			\$12.17, f. o. b.; Austrian Govt. contract for the year.	
					\$10.83, stowed; German Govt. contract to April, 1893.	
Mahé, Seychelles Ids.	Oct., 1883.	Cardiff.....	1,300	1,000	\$14.00.	About 100 yards, at inner an- chorage.

ports, together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
.....	French, at Mayotte.	None	Zanzibar, <i>Mayotte</i> , Nossi Bé.	
By lighters.....	French; also at Nossi Bé.	None	Mozambique, <i>Nossi Bé</i> , Zanzibar,	Coal is property of French Government.
By iron lighters of about 20 tons capacity, loaded at pier by natives, and towed off by steam-launch from ship; coaling by ship's crew; no interruption.	French; also at Mayotte and Diego Suarez.	None	Mozambique, <i>Mayotte</i> , Zanzibar, <i>Diego Suarez</i> , Réunion, Mauritius, Mahé.	Coal is property of French Government.
.....	French; at Nossi Bé.	None	Nossi Bé, <i>Mayotte</i> , Mozambique.	
.....	None	None	Delagoa Bay, <i>Mozambique</i> .	
.....	None	None	Delagoa Bay, <i>Mozambique</i> .	
By lighters of about 10 tons capacity; slow; only about 50 tons per day; natives will not work at night.	French; at Ste. Marie and Diego Suarez.	None	Delagoa Bay, <i>Ste. Marie</i> , Diego Suarez, Réunion, Mauritius.	
By iron lighters of about 20 tons capacity, towed off by ship's steam-launch; slow; liable to interruption by S'y winds.	French; also at Diego Suarez.	None	Delagoa Bay, <i>Tamatave</i> , Réunion, Mauritius, Diego Suarez, Mahé.	Coal is property of French Government.
.....	French; also at Nossi Bé and Ste. Marie.	None.....	Tamatave, Ste. Marie, Réunion, Mauritius, <i>Nossi Bé</i> , Mahé.	Acquired by French Government by treaty with Malagassy Government, 1885.
By lighters off St. Denis; or in docks, Pointe des Galets.	French, at Pointe des Galets; British, at Mauritius.	None.....	Delagoa Bay, Tamatave, Ste. Marie, <i>Mauritius</i> , Mahé, Diego Garcia.	The basin at Pointe des Galets is available for vessels of the largest size.
.....	As for St. Denis.	None.....	As for St. Denis.	
By lighters of 50 tons capacity; 300 tons in 24 hours; liable to interruption, Dec. to May.	British.....	None.....	Cape Town, Simon's Town, P. Elizabeth, Durban, Tamatave, <i>Réunion</i> , Mahé, Aden, Diego Garcia, Colombo, Albany.	Importation of coal to Mauritius amounts to about 45,000 tons per year, of which about 38,000 come from Great Britain.
By lighters of about 30 tons capacity; 100 tons per day; no interruption as a rule; heavy ground swell at outer anchorage.	British, by contract.	None.....	Zanzibar, <i>Nossi Bé</i> , Mauritius, Diego Garcia, Colombo, Aden.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Cape Sabine, Alaska.	Sept., 1889.	Semi-bituminous (Native.)	Mined	as required.	.....	$\frac{1}{2}$ mile from vein to anchorage.
Cape Lisburne, Alaska.	Sept., 1889.	Lignite, native. (Good.)	Mined	as required.	.....
Port Clarence, Alaska.	July, 1889.	None.....	None.....	None.....	.....
Herendeen Bay, Alaska.	July, 1890.	Bituminous..... (Native.)	Mined	as required.	.....	1 mile from mine to water front, then $\frac{1}{2}$ mile to anchorage.
Unalaska, Alaska.	Oct., 1889.	Bituminous..... (Nanaimo.)	1,700	.....	\$16.00 to \$20.00.	200 yards, for vessels coaling at wharf.
	Aug., 1891.	Bituminous.....	Large supply.	.....	About \$15.00.	
Coal Harbor, Unga Island, Alaska.	Nov., 1889.	Bituminous..... (Native; poor.)	Supply not to be depended upon.		.....
Kachemak Bay, Cook's Inlet, Alaska.	Oct., 1890.	None.....	None.....	None.....	.....
Sitka, Alaska.	Nov., 1889.	Bituminous..... (Wellington.)	400	.....	\$10.00.	100 yards, for vessels coaling at wharf.
Skidegate Inlet, Queen Charlotte Ids., B. C.	1891.	Anthracite..... (Native.)	.....	.....	.....
Fort Rupert, Vancouver Id., B. C.	1891.	Bituminous..... (Native.)	.....	.....	.....
Comox, Vancouver Id., B. C.	June, 1891.	Bituminous..... (Native.)	Ample supply.		.....
Nanaimo, Departure Bay, Vancouver Id., B. C.	May, 1891.	Bituminous (native): Nanaimo..... } Wellington..... }	Large supply.		\$3.50 to \$4.50.	

together with the usual supply on hand, cost, etc.

Manner of coaling: rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
Mined by boats' crews from large vein on beach; ship's boats land in surf; slow.	None.....	Coal veins not regularly worked.	Unalaska.	
Mined from cliff by boats' crews; mining dangerous; boats land through surf; slow; possibly only in good weather.	None.....	Coal veins not regularly worked.	Unalaska.	Mining at one time carried on by Pacific Whaling Co.; since abandoned.
	None.....	None.....	Unalaska.	Coal was formerly obtainable here from coal vessels sent to supply the whaling fleet.
From mine to water front by tramway, then by 40-ton lighter to ship.	U. S., at Unalaska.	One mine 1½ miles from anchorage, opened in spring of 1890; capacity 20 tons per day; to be increased.	Unalaska.	80 tons of coal from this mine were used by the Fish Commission steamer Albatross, July, 1890, and favorably reported upon.
Alongside wharf, by wheelbarrows, rapid; or by bags or baskets from boats, slow; or alongside coal vessels when present, rapid.	U. S., 1,000 tons belonging to Treasury Dept.; for revenue vessels.	At Herendeen Bay; at Coal Harbor, Unga Id.; and at Kachemak Bay, Cook's Inlet. None of importance.	Petropanlovski, Sitka, Nanaimo.	Of supply on hand, Oct., 1889, 1,000 tons were owned by U. S. Govt., and 700 tons by Alaska Commercial Co. In Aug., 1891, A. C. Co. had two coal vessels in port, one in inner harbor and one in outer, the latter with 2,000 tons on board.
	U. S., at Unalaska.	Coal Harbor Co.'s mine.	Unalaska, Sitka.	
	None nearer than Unalaska.	Deposits of canal coal in vicinity, reported of excellent quality; to be worked.	Unalaska, Sitka.	In Aug., 1891, the Alaska Coal Co. sent a full complement of miners and supplies to open up their claims.
Alongside wharf or by lighters in harbor; moderately rapid.	None nearer than Esquimalt.	Deposits on Admiralty Island; unworked.	Unalaska, Comox, Nanaimo.	
	British, at Esquimalt.	Extensive deposits on Graham Island; mined to a limited extent.	Unalaska, Sitka, Comox, Nanaimo.	The Skidegate mines, once abandoned, are now reported as being worked with great promise.
	British, at Esquimalt.	Extensive deposits; mines near Fort Rupert and on Quatseenough Sound.	Sitka, Comox, Nanaimo.	The Fort Rupert mines were the first mines worked on Vancouver Island (opened in 1836). The Quatseenough Sound mines were opened in 1885.
	British, at Esquimalt.	Extensive deposits; second only to Nanaimo district.	Sitka, Nanaimo.	Output of Union Mine, Comox, during month of June, 1891, was 4,500 tons.
Alongside wharves, Nanaimo and Departure Bay; from coal chutes, rapid.	British, at Esquimalt.	Extensive; Nanaimo and Wellington collieries; output 500,000 tons per year.	Sitka, Comox, Vancouver, Victoria, Seattle, Tacoma, Astoria, Coos Bay, San Francisco.	Nanaimo is the port of entry for all the collieries. The shipping wharves of the Wellington mines are about 3 miles from Nanaimo on Departure Bay. Wellington coal is considered the best of the district and commands a premium in price.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Vancouver, and Port Moody, B. C.	Nov., 1891.	Bituminous, lignitic (native).				
Victoria, and Esquimalt, Vancouver Id., B. C.	May, 1895.	Nanaimo.....	2,000	2,000	\$7.00, f. o. b.; \$7.10, stowed.	
	May, 1891.	Nanaimo..... Wellington.....		Limited supply: not to be depended upon.	\$4.00 to \$5.50.	
	July, 1891.	Wellington.....			\$10.00, from lighters.	
Port Townsend, Wash.	Aug., 1891.	None for sale...	None	None		
Seattle, Wash.	Aug., 1891.	Bituminous (native): Black Diamond Franklin New Castle Gilman Durham Cedar		Large supply.	\$4.50.	
Tacoma, Wash.	Aug., 1891.	Bituminous (native): Black Diamond Roslyn Carbonado South Prairie Tacoma Wilkeson		Large supply.	\$4.50.	
Olympia, Wash.	Jan., 1891.	Bituminous, native (Bucoda).				
Astoria, Oregon.	1890.	Australian (Newcastle, N. S. W.)		4,000 tons imported, 1890.	\$6.81, ex ship.	
Portland, and Albina, Oregon.	May, 1892.	Bituminous: Coast mines Br. Columbia Australia Gt. Britain Anthracite		Receipts by sea, 1891: 45,000 10,500 10,800 1,800 1,000	Prices of Puget Sound coals about \$1 in excess of prices at Sound ports.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
At wharves; 23 to 26 feet alongside at Vancouver, 26 feet at Port Moody.	British, at Esquimalt.	Extensive deposits on Fraser River, being developed. Port Moody is shipping port for new anthracite mines at Anthracite, Alberta.	Sitka, Comox, <i>Nanaimo</i> , Victoria, Seattle, Tacoma, Astoria, Coos Bay, San Francisco.	Distance from Vancouver to Port Moody, 14 miles; both on Canadian Pacific Ry., Vancouver the terminus.
At coal wharves, Victoria, for vessels of light draught; 12½ ft. alongside at L. W.; rapid; no interruption. For larger vessels, by lighters; liable to interruption by weather. At Esquimalt, by large lighters from Victoria.	British, at Esquimalt, 3 miles from Victoria; Cardiff coal.	Nanaimo and Wellington collieries, about 80 miles distant.	Sitka, Comox, <i>Nanaimo</i> , Seattle, Tacoma, Astoria, Coos Bay, San Francisco.	Canadian Pacific steamers coal here, but their coal is not for sale; 100 or 200 tons may be obtained at times. Two private firms deal in coal, but their supply is uncertain. Steamers do best by going directly to the mines.
Alongside wharves, from coal chutes; rapid.	British, at Esquimalt.	None nearer than mines of King County, east of Puget Sound.	Nanaimo, <i>Victoria</i> , Seattle, Tacoma, Astoria, Coos Bay, San Francisco.	Coal production of Washington is confined to counties of King, Pierce, Thurston, and Kittitas. Coal resources of the State are yet only partially developed. Total output for 1890 amounted to 1,700,000 tons.
Alongside wharves, from coal chutes; rapid.	British, at Esquimalt.	Six collieries in King County; output (1890), 498,000 tons, of which Black Diamond mine produced 170,000 tons, and Franklin mine 130,000 tons.	Sitka, Comox, <i>Nanaimo</i> , Victoria, Tacoma, Olympia, Astoria, Coos Bay, San Francisco.	Tacoma is the shipping port of the Roslyn mines, of Kittitas County, operated by the Northern Pacific Coal Co. These mines have the largest output of any in the State, amounting to 445,000 tons, 1890.
Vessels of 22 ft. draught can lie at wharves at L. W.	British, at Esquimalt.	Carbonado, South Prairie, Tacoma, and Wilkeson mines, in Pierce County; total output (for 1890), 385,000 tons, of which Carbonado produced 295,000 tons.	Sitka, Comox, <i>Nanaimo</i> , Victoria, Seattle, Olympia, Astoria, Coos Bay, San Francisco.	None nearer than Esquimalt.
Vessels of 22 ft. draught can lie at wharves at L. W.	None	Bucoda mines, Thurston County, 16 miles distant; output 399,000 tons, in 1890.	Tacoma, Seattle, Victoria, <i>Nanaimo</i> , Astoria, Coos Bay, San Francisco.	Improvements at mouth of Columbia River have increased depth of channel to 26 feet. A further increase of 4 feet is expected when work is completed.
Stathees for shipment of coal at West Portland and Albina; 300 to 400 tons per day; New Castle mine, Wash., is chief source of supply.	None	None	Nanaimo, Victoria, Seattle, Tacoma, <i>Portland</i> , Coos Bay, San Francisco.	Coal deposits are known to exist in nineteen counties of Oregon, but the only development of consequence is in the Coos Bay district.
Stathees for shipment of coal at West Portland and Albina; 300 to 400 tons per day; New Castle mine, Wash., is chief source of supply.	None	Nehalem coal tract, Columbia County, about 25 miles distant.	Nanaimo, Victoria, Seattle, Tacoma, <i>Astoria</i> , Coos Bay, San Francisco.	Coal deposits are known to exist in nineteen counties of Oregon, but the only development of consequence is in the Coos Bay district.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Coos Bay, Oregon.	July, 1888.	Bituminous: Newport..... } Caledonia..... }	Ample supply.		\$3.00, at mine.	.
	Jan., 1889.	Newport.....			\$3.00, local retail price.	
San Francisco, Cal.	Jan., 1891.	Anthracite.....		4,900	\$18.00 to \$19.00.	½ mile to ½ mile from wharves to usual anchorage for men-of-war.
		Bituminous: Wellington..... } Nanaimo..... }		345,000	\$10.50 to \$12.00.	
		Seattle.....		247,700	\$11.00.	
		Tacoma.....		195,800	\$11.00.	
		Australian.....		155,300	\$11.50.	
		Coos Bay.....		54,000	\$11.00.	
		West Hartley.....			\$10.00.	
		Scotch.....		40,800	\$10.00.	
		Cardiff.....			\$13.00.	
		Cumberland.....		27,800	\$17.00.	
	Japanese.....		13,200			
	Apr., 1891.	Anthracite.....			\$16.00 to \$17.00.	
		Bituminous: Wellington.....			\$10.00.	
		Seattle.....			\$10.00.	
Tacoma.....				\$6.00.		
July, 1892.	Coos Bay.....			\$7.00.		
	Australian.....			\$8.50.		
	Lancashire.....			\$8.50.		
	West Hartley.....			\$9.00.		
Oct., 1890.	Scotch.....			\$9.00.		
	Cumberland.....			\$13.50.		
	Seattle.....			All spot values, ex ship. \$7.00.		
	Coos Bay.....			\$5.50.		
Mare Island, Cal.	Oct., 1890.	Seattle.....			\$6.25.	50 to 200 yards.
		Cardiff.....			\$7.25.	
		Anthracite.....	1,500	750	\$14.29.	
San Pedro, Cal.	Jan., 1892.	Wellington.....	20		\$11.43.	
		Domestic and foreign coals, as at San Francisco.		90,000 tons, foreign, imported, 1891.	Higher than at San Francisco.	
San Diego, Cal.	Jan., 1892.	(See San Pedro).	15,000	70,000 tons, foreign, imported, 1891.		
La Paz, and Pichilingue Bay, Mexico.	Dec., 1891.	None.....	None.....	About 1,000 tons at Pichilingue Bay, belonging to U. S. Govt.; supply not to be depended upon.		About 300 feet, at Pichilingue Bay coaling station.
Guaymas, Mexico.	Sept., 1890.	Bituminous..... (Blossburg, N. M.)	Small supply belonging to Sonora R.R.Co.	3,500 tons imported per year by Sonora R. R. Co., for own use.	\$14.00 to \$15.00.	2 miles for vessels of 20 feet draught.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
Alongside coal bunkers at Empire City and Marshfield; rapid. Vessels exceeding 14 ft. draught can not cross Coos Bay bar. Improvements in progress. (18 ft. water over bar, 1892).	None	Newport mine, Oregon Coal and Navigation Co.; output 61,500 tons, 1890. Caledonia mine, smaller; shut down, 1889.	Nanaimo, Victoria, Seattle, Tacoma, <i>Astoria</i> , Portland, San Francisco.	Total coal production for State of Oregon, 75,000 tons, 1890.
At wharves, or by lighters. Men-of-war usually coal at anchorage by large lighters and baskets; only liable to temporary interruption by high winds.	U. S. at Mare Island.	Mt. Diablomines, lignitic, about 40 miles distant from Oakland by rail; output 58,800 tons, 1888.	Nanaimo, Victoria, Seattle, Tacoma, Astoria, Portland, Coos Bay, <i>San Pedro</i> , San Diego, Pichilingue, Mazatlan, Acapulco, Panama, Honolulu.	Coal prices at San Francisco are subject to great fluctuation, dependent upon the supply and upon the ruling freight rates. The importation of British coal is regulated by the grain crop. Coal deposits exist in various places in California, but the only development of consequence has been at Mt. Diablo and in several places on Southern Pacific R. R. Total production, for 1890, was 90,000 tons.
At wharf, by wheelbarrows; 100 to 150 tons per day; or by coal barges alongside in stream; no interruption.	U. S. navy yard.	As for San Francisco.	As for San Francisco.	All coal here is property of Government; prices quoted are cost to Government, laid down at navy yard.
By lighters, or alongside coal ship; liable to interruption by SE. gales.	None	None	San Francisco, <i>San Diego</i> , Acapulco, Panama.	Coal at this port is chiefly property of Southern Pacific R. R.
.....	None	None	<i>San Pedro</i> , and as for San Pedro.	Depth of water on bar at L. W. springs, 23 ft.
At Pichilingue Bay, by lighters of 10 to 18 tons capacity, hired from La Paz at \$10 to \$15 per day; by ship's crew, or by laborers from La Paz at \$1 per day each, delivering alongside; 5 to 8 tons per hour; no interruption.	U. S., on San Juan Nepomuceno, Pichilingue Bay, 7 miles from La Paz; supply exhausted, Oct. 1891. Mex. Govt. usually has about 150 tons opposite La Paz.	None	San Francisco, San Pedro, San Diego, <i>Mazatlan</i> , Acapulco, Panama.	The U. S. station at Pichilingue Bay is not replenished with sufficient regularity to enable vessels to depend upon obtaining a supply, except when in possession of direct information.
By lighters; moderately rapid; no interruption.	None	Anthracite, at Los Bronces and La Barranca, 120 miles distant, on Yaqui River; small output; no rail connection.	<i>Pichilingue</i> , Mazatlan, Acapulco.	Extensive deposits of anthracite of good quality are reported in district extending from San Marcial eastward to Yaqui River; concessions have been granted for mining at San Marcial and Orcha, distant 60 to 70 miles.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Altata, Mexico.	Nov., 1883.	None	None			
Mazatlan, Mexico.	June, 1891.	Cardiff..... Australian.....	500	1,000	\$24.64, stowed.	1½ miles to usual anchorage.
	Apr., 1892.	Cardiff..... Australian.....	200 500		\$19.00, alongside. \$18.75, alongside.	
San Blas, Mexico.	Sept., 1883.	None	None	None		
Acapulco, Mexico.	Apr., 1891.	Cardiff..... Lancashire..... Australian..... Nanaimo.....	10,800	7,000	\$20.00, alongside; \$21.50, stowed.	About 300 yards.
San José, Guatemala.	Sept., 1890.	None	None	None		
Acajutla, San Salvador.	Jan., 1886.	None	None	None		
La Libertad, San Salvador.	Jan., 1886.	None	None	None		
La Unión, San Salvador.	Jan., 1886.	None for sale	None	None		
Amapala, Honduras.	Oct., 1890.	None	None	None		
Corinto, Nicaragua.	Feb., 1891.	Bituminous..... (Poor quality.)	100	No regular supply.	\$16.00, alongside.	About ¼ mile.
Punta Arenas, Costa Rica.	Oct., 1883.	None, except Government supply.	200 (Belonging to Govt.)	500		Govt. pile, about ½ mile.
Panama, Colombia.	Sept., 1890.	Cardiff.....	15,000	15,000	\$15.00, at pile; \$17.00, alongside.	About 2½ miles for large vessels.
		Cumberland.....				
		Pocahontas.....				
Buenaventura, Colombia.	Sept., 1884.	None	None	None		
Guayaquil, Ecuador.	Sept., 1890.	No regular supply for vessels.		About 6,000 tons per year imported for local use.	\$18.00, on shore.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters of 25 to 30 tons capacity, towed out by a steam launch; coal bagged and weighed on shore; slow; liable to interruption, July to November.	U. S., at Pichilingue Bay, 150 miles distant.	None	Pichilingue, <i>Mazatlan</i> , <i>Acapulco</i> .	
	Mexican Govt., about 600 tons, 1887.	None	San Francisco, San Pedro, San Diego, <i>Pichilingue</i> , <i>Acapulco</i> , <i>Panama</i> .	Not to be depended upon as a coaling port for any considerable supply.
	None	None	<i>Mazatlan</i> , <i>Acapulco</i> .	
Bagged and brought off in lighters of about 15 tons capacity, towed by ship's steam launch; 150 to 175 tons per day; no interruption.	Mexican Govt., about 800 tons, 1887; English contract for 10 years from 1889, at least 600 tons to be kept on hand, to be delivered alongside at \$21.90 per ton.	None	San Francisco, San Pedro, San Diego, <i>Pichilingue</i> , <i>Mazatlan</i> , <i>Panama</i> .	The greater part of the supply at this port is the property of the Pacific Mail S. S. Co.
	None	None	<i>Acapulco</i> , <i>Panama</i> .	
	None	None	<i>Acapulco</i> , <i>Panama</i> .	
	None	None	<i>Acapulco</i> , <i>Panama</i> .	
	None	None	<i>Acapulco</i> , <i>Panama</i> .	
By lighters; rapid; no interruption.	None	None	<i>Acapulco</i> , <i>Panama</i> .	
	Costa Rican, at San Lucas.	None	<i>Acapulco</i> , <i>Panama</i> .	
By iron lighters of 85 to 135 tons capacity, as rapidly as coal can be stowed; or from colliers alongside; vessels of 20 feet draught can coal at Perico Island. Occasional delays in obtaining lighters; liable to interruption by weather.	British, by contract with P. S. N. Co.	None	San Francisco, San Pedro, San Diego, <i>Pichilingue</i> , <i>Mazatlan</i> , <i>Acapulco</i> , <i>Callao</i> , <i>Iquique</i> , <i>Cochimbo</i> , <i>Valparaiso</i> .	Coal is usually supplied by Panama R. R. Co. Depots are maintained by Pacific Mail S. S. Co. and Pacific Steam Navigation Co., the former at Flamenco, the latter at Taboga. Total consumption at Panama, including supply of all steamers, amounts to about 38,000 tons per year.
	None	None	<i>Panama</i> , <i>Callao</i> .	
By lighters, when coal is obtainable.	None	None	<i>Panama</i> , <i>Callao</i> .	Though not a coaling port, a small supply might be obtained here in case of necessity. Cardiff and Australian coals are imported. Coke can be obtained from the gas works.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Tumbez, Peru.	Sept., 1886.	None	None	None		
Payta, Peru.	Apr., 1891.	None	None	None		
Lobos Islands, Peru.	Sept., 1886.	None	None	None		
Eten, Peru.	Sept., 1886.	None	None	None		
Pacasmayo, Peru.	Oct., 1884.	None	None	None		
Salaverry, Peru.	Sept., 1886.	None	None	None		
Chimbote, Peru.	1885.					
Callao, Peru.	June, 1888.	Cardiff.....	1,200 (Exclusive of supply owned by P. S. N. Co.)	3,000	Fell from \$18.00 to \$10.50 within two weeks; usual price about \$15.00.	Coal hulks within ½ mile of usual anchorage.
	Feb., 1892.	Cardiff.....	15,000		\$13.87, stowed.	
Mollendo, Peru.	1891.					
Arica, Chile.	1887.	No regular supply for vessels.	A supply maintained by the R. R. Co., for their locomotives.			
Pisagua, Chile.	Nov., 1884.	Newcastle	} 5,000	4,000	\$8.50; lighterage, per ton, from coal ship, 30 c.; from shore, \$1.00.	
		Lancashire				
Iquique, Chile.	Nov., 1890.	West Hartley.....		100,000	} \$10.22, at pile.	Storehouses near beach; coal readily shipped from mole.
		Australian		27,000		
		Cardiff pat. fuel.....		17,000		
		Lancashire		12,000		
		Chilian			\$8.76, at pile.	
	May, 1891.	West Hartley.....			\$14.84, stowed.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
.....	None	None	Panama, <i>Callao</i> .	
Formerly from hulk, by lighters, or by going alongside; supply no longer maintained.	None	None	Panama, <i>Callao</i> .	The trade in coal at Payta has been rendered unprofitable by the imposition of heavy import duties.
.....	None	None	Panama, <i>Callao</i> .	
.....	None	Deposits about 125 miles inland; not worked.	Panama, <i>Callao</i> .	
.....	None	Deposits about 125 miles inland; not worked.	Panama, <i>Callao</i> .	Fuel used on railway is a hard wood (<i>Algorroba</i>) from the interior, sold at about \$5 per ton.
.....	None	Deposits inland; not worked.	Panama, <i>Callao</i> .	
.....	None	Deposits inland; not worked.	Panama, <i>Callao</i> .	A depot maintained by R. R. Co., for supply of locomotives.
By lighters of 30 to 80 tons capacity; rapid, as a rule; vessels sometimes roll considerably to ground swell; no interruption.	British, by contract.	None	Panama, <i>Pisagua</i> , <i>Iquique</i> , <i>Caldera</i> , <i>Coquimbo</i> , <i>Valparaiso</i> , <i>Talcahuano</i> , <i>Lota</i> .	Price of coal subject to considerable fluctuation, according to supply on hand and to its being held by one or both of the two coal-dealing firms. P. S. N. Co. maintain a private depot. London & Pacific Petroleum Co. have large tanks of refuse petroleum (1891); this fuel has been adopted on Oroya R. R., and in some of the coast steamers.
By lighters, when coal is obtainable; bad place to lie; rocky bottom, and strong currents; liable to lose anchors.	None	None	<i>Callao</i> , <i>Pisagua</i> , <i>Iquique</i> .	Petroleum refuse fuel, supplied by London & Pacific Petroleum Co., from their works at Talara, northern Peru, has been adopted on locomotives of the Molendo, Arequipa, and Puno R. R.
By lighters, when coal is obtainable; vessels roll considerably to swell.	None	None	<i>Callao</i> , <i>Pisagua</i> , <i>Iquique</i> .	Though not a regular coaling port, coal can usually be purchased.
By lighters, from newly arrived coal vessels, or from shore; no interruption.	None	None	<i>Callao</i> , <i>Iquique</i> , <i>Caldera</i> , <i>Coquimbo</i> , <i>Valparaiso</i> , <i>Lota</i> .	Total receipts of coal at <i>Pisagua</i> for the year 1886, 17,500 tons, all from Great Britain.
By lighters of about 20 tons capacity; rapid; liable to interruption by heavy surf.	None	None	<i>Callao</i> , <i>Pisagua</i> , <i>Caldera</i> , <i>Coquimbo</i> , <i>Valparaiso</i> , <i>Talcahuano</i> , <i>Lota</i> .	A great part of the importation of coal at <i>Iquique</i> is for the nitrate works of the district. The patent fuel imported is for use on the railways.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Tocopilla, Chile.	Dec., 1886.	None	None	Supply not to be depended upon.		
Antofagasta, Chile.	Jan., 1887.	Chilian	Small supply.	About 20,000 tons recd. per year.		
Taltal, Chile.	Dec., 1886.	None	None	Small supply usually obtainable.		
Caldera, Chile.	Mar., 1887.	Bituminous: English Chilian	Small supply. 2,000	1,400	\$5.00 to \$5.25; lighterage, per ton, 50c.	½ mile.....
Carrizal Bajo, Chile.	Jan., 1887.	Australian	} 500	Uncertain...}	\$7.00.	
		Chilian				
Huasco, Chile.	Dec., 1886.	None	None.....	None		
Coquimbo, Chile.	July, 1891.	Cardiff	} 4,000	} 5,000 to 8,000, exclusive of British Govt. supply.	\$10.95, alongside.	About ½ mile.
		West Hartley				
		Australian	2,500			
Tongoy, Chile.	July, 1891.					About ½ mile for large vessel.
Valparaiso, Chile.	Oct., 1890.	Bituminous: Great Britain	} About 50,000 tons recd. per year.	}	\$7.79, cost to importer.	
		Australia				
		Chile.....	About 150,000 tons recd. per year.		\$2.25 to \$3.00, ex ship.	
Talcahuano, Chile.	Mar., 1887.	Chilian (Lota)...	Small supply on hand; large quantities obtainable from Coronel and Lota at two days' notice.		\$5.10.	About 1 mile.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>itatic</i> .)	Remarks.
By lighters, when coal is obtainable; vessels roll considerably to swell.	None	None	Iquique, Antofagasta, Caldera.	Coal receipts per year, about 10,500 tons, chiefly from Great Britain; 1,500 tons from Chilean mines.
By lighters; bad place to coal; considerable swell; uneven and rocky bottom; vessels liable to lose anchors.	None	None	Iquique, Caldera.	In addition to Chilean coal received at Antofagasta, about 1,500 tons are imported per year from Great Britain.
By launches of 20 to 35 tons capacity, when coal is obtainable; no interruption.	None	None	Iquique, Antofagasta, Caldera.	Coal receipts per year, about 17,000 tons; 14,000 from Great Britain, and 3,000 from Chilean mines; chiefly for use of railway, copper and silver mines, and nitrate works.
By lighters of about 20 tons capacity; rapid; no interruption; or at wharf, for vessels of 20 feet draught.	None	None	Callao, Iquique, Carrizal Bajo, Coquimbo, Valparaiso.	Coal receipts per year: from Chilean mines, about 30,000 tons; from Great Britain, about 5,000 tons.
By lighters of 20 to 30 tons capacity.	British, at Coquimbo.	None	Iquique, Antofagasta, Caldera, Coquimbo.	Coal usually obtainable from R. K. Co. Total receipts per year at port amount to 15,000 tons, of which 9,000 come from Chilean mines.
	British, at Coquimbo.	None	Caldera, Coquimbo.	
By lighters; about 250 tons per day can be loaded into lighters; notice should be given beforehand to avoid delay; ship's crew coal ship; no interruption.	British; 4,000 to 5,000 tons Cardiff, stored in yard of railway company.	.....	Callao, Iquique, Caldera, Tongoy, Valparaiso, Talcahuano, Lota, Sandy Point.	Greater part of coal supply is stored at Guayacan, 1½ miles south of city. Total consumption per year, about 35,000 tons (1889), of which about 10,000 from Chilean mines.
Light-draught vessels can go alongside coal staites at wharf; 30 tons per hour.	British, at Coquimbo.	.....	See Coquimbo.	
From hulks, by lighters of about 40 tons capacity, or from newly arrived coal ships; about 200 tons per day; liable to interruption by northers, May to September.	Chilian; Cardiff for Govt. vessels.	None	Callao, Iquique, Caldera, Coquimbo, Tongoy, Talcahuano, Lota, Sandy Point.	Storage capacity of coal hulks at Valparaiso is about 2,000 tons.
By lighters or from coal vessels alongside; liable to interruption by wind, June to August.	None	Extensive; chiefly at Coronel and Lota, about 30 miles distant; nearest at Penco, on smaller scale.	Callao, Iquique, Caldera, Coquimbo, Valparaiso, Lota, Sandy Point.	Total output of Chilean mines situated in vicinity of Arauco Bay, about 600,000 tons per year (1890), distributed as follows: Cia. Exploradora de Lota y Coronel, 200,000; Cia. de Arauco, 140,000; F. W. Schwager, Maule, 80,000; Rogas, Coronel, 60,000; Cia. de Lebu, 60,000; Penco, Concepcion, etc., 60,000.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Coronel, and Lota, Chile.	Oct., 1890.	Bituminous: Lota	Large supply directly from mines.		\$6.00, f. o. b.	From mines by rail to pier at Lota, $\frac{1}{2}$ to $\frac{1}{2}$ mile; pier to ship, $\frac{1}{2}$ mile.
		Coronel			\$5.00, f. o. b.	
	Nov., 1891.	Lota			\$5.00, f. o. b.	
Lebu, Chile.	Oct., 1890.	Bituminous.	Ample supply directly from mines.		\$4.00, f. o. b.	
Corral, and Valdivia, Chile.	1886.	Chilian	Small supply.	Not to be depended upon.		
Sandy Point, Chile.	May, 1888.	Cardiff	500	1,000	\$17.03 to \$18.25.	Coal stored in hulk.
Honolulu, Oahu, Sandwich Ids.	Aug., 1887.	Anthracite (U. S. Govt.)	1,263	16,000	\$20.00, invoice price.	100 to 300 yards, inside bar.
		Bituminous: Australian	11,000		\$12.00, alongside.	
		Nanaimo	4,000	\$12.00, alongside.		
	Oct., 1890.	Anthracite (U. S. Govt.)			\$15.25, cost, laid down.	
Hilo, Hawaii, Sandwich Ids.	Feb., 1883.	Anthracite	Small supply.		Honolulu prices.	
		Bituminous				
Papeete, Tahiti, Society Ids.	Oct., 1888.	Newcastle	600	500 to 2,500	\$16.00, alongside.	About $\frac{1}{2}$ mile.
		Australian	1,500		\$10.00, alongside.	
Pago Pago, Tutuila, Samoa Ids.	Jan., 1890.	Anthracite (U. S. Govt.)	1,683	1,300	\$17.50 to \$19.50, cost to Govt.; loading lighters, at \$1.00 per day to native laborers, 75c. per ton.	300 to 400 yards.
Apia, Upolu, Samoa Ids.	June, 1886.	Westphalian	100	100	\$15.00 to \$20.00.	
	1887.	Westphalian			\$12.75; \$11.00;	
		Australian			German Govt. contract prices for 3 years.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
Best facilities at Lota; vessels not exceeding 21 ft. draught can coal alongside pier at rate of about 600 tons per day; larger vessels by lighters; 10 tons per hour; liable to interruption by SW. winds or by swell.	None.....	Very extensive. <i>See</i> Remarks, Talcahuano.	Callao, Iquique, Caldera, Coquimbo, Valparaiso, <i>Talcahuano</i> , Lebu, Sandy Point.	Coronel is port of entry for both places, the distance between which is about 3 miles. Coal freights to Valparaiso, \$1.25 to \$2.00 per ton; to Antofagasta, \$1.50 to \$2.25; Iquique, \$1.75 to \$2.50; Pisagua, \$2.00 to \$2.75. Chilean coal is of good evaporative power, but produces dense smoke; boiler tubes soon become choked by soot.
By lighters; liable to interruption by northerly and by strong westerly winds.	None.....	60,000 tons yearly output.	<i>See</i> Coronel and Lota.	Coal freights to coast ports, as for Coronel and Lota.
Alongside hulk, or by lighters; preferably the former, except when rough; coal handled by ship's crew; poor facilities; slow; liable to interruption by weather.	None.....	Lota, Coronel, and Lebu.	<i>Lota</i> , Sandy Point.	Capacity of hulk is 1,200 tons; the supply is maintained with regularity; annual sales amount to 3,000 to 4,000 tons.
At wharf, or by lighters inside bar, for vessels not exceeding 22 feet draught; 200 tons per day; no interruption; larger vessels outside bar; slow; liable to interruption by S'y winds, Nov. and Dec. (<i>See</i> Remarks.)	U. S.; 1,000 to 1,200 tons of anthracite usually on hand.	Mines 6 miles distant, abandoned 1888, on account of poor quality of the coal.	Iquique, Coquimbo, Valparaiso, Talcahuano, Lota, Lebu, <i>Port Stanley</i> , Montevideo, Rio de Janeiro.	1892.—Depth of water on bar increased by dredging to 28 feet; channel and harbor to be uniformly deepened to 30 feet, and maintained thereat.
At sea wall for vessels not exceeding 12 feet draught; larger vessels at arsenal wharf, or by lighters, or from coal schooner alongside; coaling done by ship's crew; about 8 tons per hour; no interruption.	U. S., at Honolulu.	None.....	San Francisco, Tahiti, Pago Pago, Suva, Nonmes, <i>Jaluit</i> , Matupi, Yokohama.	Total importation of coal, during 1890, amounted to 3,400 tons.
By lighters, 3 in number, carrying an average load of 5 tons, filled by natives at 10 to 50 yards from beach, by means of tubs, etc., supplied from ship; towed off by ship's boats; about 4 tons per hour.	French, at Marine Arsenal; 500 to 2,000 tons, chiefly Australian.	None.....	<i>Honolulu</i> , and as for Honolulu.	None.....
By lighters, 8 to 10 tons capacity; liable to interruption in hurricane season.	U. S.....	None.....	Honolulu, <i>Jaluit</i> , <i>Apia</i> , Tahiti, Suva, Auckland.	None.....
By lighters of 8 to 10 tons capacity; liable to interruption in hurricane season.	German, by contract, 1887, U. S., at Pago Pago.	None.....	Honolulu, <i>Jaluit</i> , <i>Pago Pago</i> , Tahiti, Suva, Auckland.	None.....

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Nei-Afu, Vavu, Tonga Ids.	July, 1886.	None	None	None		
Nukualofa, Tongatabu, Tonga Ids.	July, 1886.	None	None	None		
Levuka, Ovalau, Fiji Ids.	Aug., 1886.	English	100	Not to be depended upon.	\$9.73, f. o. b.	About 600 feet, pier to anchorage.
Suva, Viti Levu, Fiji Ids.	Aug., 1886.	Australian		Hulk kept loaded, by contract with British Govt.	\$9.73, f. o. b.	
Noumea, New Caledonia.	Aug., 1890.		7,000	7,000 (Yearly importation, 22,000 tons, 1891.)	\$8.00.	
Matupi, Blanche Bay, New Britain.	Jan., 1886.	Westphalian	1,200	1,000	\$14.60	About 200 yards.
	Oct., 1887.	Westphalian Australian				
Doreh, Geelvink Bay, New Guinea.	June, 1888.				\$14.05 alongside; \$10.66 (German Govt. contract.)	
Ternate, Ternate Id., Moluccas.	Mar., 1888.	Cardiff	500 (Government supply.)	750	\$14.60, f. o. b.	
Amboyna, Amboyna Id., Moluccas.	Mar., 1888.	Newcastle (To be replaced by Cardiff.)	1,000 (Government supply.)	1,000		
Banda Neira, Banda Isles, Moluccas.	June, 1888.			Not always to be depended upon.		
Glaser, Banda Isles, Moluccas.	June, 1888.	English Borneo	Supply maintained by Government.		\$19.95.	
					\$13.87.	
Buton, Buton Id., D. E. I.	June, 1888.	English Borneo	Supply maintained by Government.		\$17.03, f. o. b.	
					\$12.17, f. o. b.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	U. S., at Pago Pago.	None	<i>Pago Pago</i> , Suva, Auckland.	
	U. S., at Pago Pago.	None	As for <i>Nei-Afu</i> .	
By lighters; slow; no interruption. Queen's Wharf, 625 ft. long, has 18 to 30 ft. alongside at L. W.	U. S., at Pago Pago; British, by contract, at Suva; French, at Noumea.	None	Pago Pago, Apia, Suva, Noumea, Auckland.	
Alongside hulk; 200 tons per day; occasional cyclones, December to March.	British, by contract.	None	Pago Pago, Apia, Noumea, Auckland, Newcastle.	
By lighters, or hulks; or alongside wharf for vessels not exceeding 17 feet draught; cyclones in January and February.	French Govt. depot.	One mine, bituminous, opened near Noumea, on small scale.	Honolulu, Pago Pago, Suva, Auckland, Newcastle, Matupi, Jaluit.	Coal mines of New Caledonia are apparently rich, but are reported (April, 1891) as non-productive on account of lack of capital and proper labor.
By lighters; slow; 50 to 100 tons per day.	German, by contract.	None	<i>Jaluit</i> , Manila, Ternate, Port Kennedy, Noumea, Brisbane, Newcastle.	
	Netherlands Govt. coaling station established.	None	Matupi, Ternate, Amboyna.	
Preferably at pier; 5 fathoms of water at end.	Netherlands Govt. coaling station.	Mines on Gilolo Island, coal of poor quality; also on Bachian Island; deposits on Obi Island and Sula-Besi.	Matupi, Manila, Kema, Gorontalo, Amboyna, Buton, Macassar, Surabaya.	In addition to Government supply, coal is kept by Netherlands-India S. S. Co.
At coal wharf; 4 fathoms alongside; slow; about 60 tons per day.	Netherlands Govt. coaling station.	Nearest on Bachian Island.	Ternate, <i>Gisser</i> , Port Kennedy, Buton, Macassar, Surabaya.	In addition to Government supply, coal is kept by Netherlands-India S. S. Co.
At pier.....	Netherlands, at Gisser.		Ternate, Amboyna, <i>Gisser</i> , Buton.	
	Netherlands Govt. depot; also at Amboyna.		Ternate, Amboyna, Buton, Port Kennedy.	
	Netherlands Govt. depot.		Gisser, Amboyna, Macassar, Surabaya.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Gorontalo, Celebes.	June, 1888.	Borneo.....			\$13.20.	
Kema, Celebes.	June, 1888.	English.....			\$19.20.	
Menado, Celebes.	Feb., 1887.	Bituminous....	Supply maintained by Netherlands-India S. S. Co.		\$12.00.	
Kwandang, Celebes.	June, 1888.	English.....			\$17.15.	
Tontoli, Celebes.	June, 1888.	English.....			\$16.90.	
Macassar, Celebes.	Mar., 1888.	Cardiff..... West Hartley... Cardiff (Govt.)..	2,000 } 2,500 } 1,000	4,500 } 1,000	\$18.00, f. o. b. \$12.41, f. o. b. To naval vessels, by courtesy, at \$9.94, plus 24 cents per ton per laborer.	
Bima, Sumbawa, Sunda Ids.	Feb., 1887.	Bituminous....	Supply maintained by Netherlands-India S. S. Co.		\$12.00.	
Kupang, Timor, Sunda Ids.	Aug., 1890.	Welsh.....	Considerable supply.			
Dili, Timor, Sunda Ids.	Feb., 1887.	Bituminous....			\$12.00.	
Port Darwin, Northern Territory, Australia.	1890.			Not to be depended upon.		
Port Kennedy, Thursday Id., Torres Straits.	Aug., 1890.	Australian....	Ample supply.			Coal stored in hulks; vessels of 25 feet draught lie about 5 miles out.
Cooktown, Queensland, Australia.	Jan., 1886.	Australian....	Supply sometimes falls as low as 100 tons.			1½ miles for vessels of 18 feet draught.
Townsville, Queensland, Australia.	1891.	Australian....				About 2 miles from wharves to anchorage.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	Netherlands Govt. depot; also at Kema and Ternate.		<i>Kema</i> , Ternate, Amboyna, Buton.	
	Netherlands Govt. depot; also at Gorontalo and Ternate.		Gorontalo, Ternate, <i>Menado</i> , Kwandang.	
By lighters.....	Netherlands, at Kema, and at Ternate.		Ternate, <i>Kema</i> , Kwandang, Tontoli.	
	Netherlands, at Kema, and at Ternate.		Ternate, <i>Kema</i> , <i>Menado</i> , Tontoli.	
			Ternate, <i>Kema</i> , <i>Kwandang</i> , Macassar.	
By lighters, or at pier, or at Government coal wharf.	Netherlands Govt. depot; 1,000 tons.		Manila, Tontoli, <i>Ternate</i> , Amboyna, Buton, <i>Bima</i> , Surabaya, Batavia.	Netherlands-India S. S. Co. maintain a supply here.
	Netherlands, at Macassar.	None	Surabaya, <i>Macassar</i> , Kupang.	
From sheds on beach, 4 or 5 miles from town, by ship's boats; no landing; coal carried to boats in baskets by natives; slow; only practicable when smooth.		None	Port Kennedy, Gisser, Amboyna, Buton, <i>Dili</i> , Bima, Macassar, Surabaya.	Netherlands-India S. S. Co. maintain a supply at this port.
		None	<i>See</i> Kupang.	Supply maintained by the Netherlands-India S. S. Co.
At pier, if obtainable.....	British, at Port Kennedy.	None	Port Kennedy, <i>Kupang</i> , Gisser, Amboyna.	
Alongside hulks, for vessels not exceeding 22½ feet draught; by lighters or small schooners for larger vessels; slow in latter case.	British	None	Kupang, Amboyna, Gisser, Matupi, <i>Cooktown</i> , Brisbane, Newcastle.	
	British, at Port Kennedy.	Deposits; undeveloped.	Matupi, Port Kennedy, <i>Townsville</i> , Brisbane.	
By lighters; wharves available only for light-draught vessels.	British, at Port Kennedy.		Port Kennedy, <i>Cooktown</i> , Maryborough, Brisbane.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost per ton.	Distance from coal pile to ship.
Maryborough, Queensland, Australia.	1890.	Bituminous (Native.)		Ample supply.		
Brisbane, Queensland, Australia.	Jan., 1885.	Bituminous (Native.)		Ample supply.	\$3.16 f. o. b., in river; \$4.50 to \$4.87, f. o. b., in Moreton Bay.	
Newcastle, New South Wales, Australia.	Oct., 1890.	Bituminous (Native.)		Large supply directly from mines.	\$2.92, f. o. b.	
Sydney, New South Wales, Australia.	Dec., 1884.	Bituminous (Native.)		Large supply directly from mines.	3.04, f. o. b.	About $\frac{1}{2}$ mile.
Melbourne, Williamstown, and Geelong, Pt. Phillip Bay, Victoria, Australia.	Oct., 1885.	Australian (Newcastle and Wollongong.)	12,500	10,000	\$5.60, stowed.	
Port Adelaide, South Australia.	Dec., 1883.	Australian (Newcastle and Wollongong.)	8,000		\$7.68, in hulk; \$8.88, f. o. b., at Semaphore Anchorage.	
Albany, Western Australia.	Sept., 1885.	Australian (Newcastle.)	2,500	2,500	\$8.52, in hulk; delivery extra; labor, 24c. per man per hour.	
Freemantle, Western Australia.	1891.	Australian				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling: rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters, or at Government Wharf; 30 tons per hour, by crane, in latter case.	None	At Burrum; rail connection.	Matupi, Port Kennedy, Cooktown, Townsville, <i>Brisbane</i> , Newcastle, Sydney.	Not available for vessels exceeding 17½ feet draught; channel being deepened, 1891; vessels of 24 feet draught can anchor at White Cliffs, 27 miles below town.
Vessels able to cross bar (about 19 ft. at H. W.) can coal in river at points owned by collieries; larger vessels in Moreton Bay, 15 miles distant, by lighters and steamers; 300 to 400 tons per day.	Nearest at Sydney.	Tivoli, A berdare, and other mines of West Moreton; extensive at Ipswich, about 25 miles distant; Clifton mines, Darling Downs, 140 miles distant by rail.	Matupi, Port Kennedy, Cooktown, Townsville, <i>Maryborough</i> , Newcastle, Sydney, Melbourne, Wellington, Auckland, Noumea.	Total output of Queensland mines (for 1888), 312,000 tons.
Alongside wharves, for vessels of 20 ft. draught; coal staithes and hydraulic cranes; very rapid; no interruption; for large vessels, by lighters; rapid.	British, at Sydney.	Extensive; also at Matland and Singleton, about 15 and 45 miles distant, respectively, by rail; 2,200,000 tons output, 1886.	Matupi, Port Kennedy, <i>Maryborough</i> , <i>Brisbane</i> , <i>Sydney</i> , Melbourne, Wellington, Auckland, Noumea.	Total output of mines of New South Wales (1888), 2,923,000 tons.
By steam colliers alongside; rapid; no interruption.	British, at dockyard (1891).	Wollongong district; extensive; Osborne Wallsend, Bulli, Coal Cliff, Illawarra, and Mt. Kembla mines; output, 370,000 tons, 1886.	Matupi, Port Kennedy, <i>Maryborough</i> , <i>Brisbane</i> , <i>Newcastle</i> , Melbourne, Wellington, Auckland, Noumea.	Coal is brought to Sydney from both the Newcastle and Wollongong districts. The coals of the Lithgow Valley district, about 100 miles inland, are not well adapted for steaming purposes.
At anchorages, Hobson Bay and Geelong Harbor, by large lighters, hulks, or steam colliers alongside; very rapid; no interruption; vessels of 25 ft. draught can go alongside pier at Williamstown.	None	None	Wellington, Auckland, <i>Brisbane</i> , Newcastle, Sydney, <i>Launceston</i> , Adelaide, Albany.	Coal usually furnished steamers at this port is a mixture of that from the Newcastle district with Bulli coal from the Wollongong district.
By large lighters, towed by tugs, 300 tons per day; or alongside hulks; rapid; liability to interruption at Semaphore Anchorage during winter months.	None	None; deposits inland to Nd.; a seam of bituminous coal, 48 ft. thick discovered (1891) at Leigh's Creek, about 400 miles distant by rail.	Newcastle, Sydney, <i>Launceston</i> , <i>Melbourne</i> , Albany.	
Alongside hulks; 40 tons per hour, or as rapidly as stowing permits; no interruption.	British depot (1891).	None; deposits on River Collic, 30 miles from Bunbury; semi-bituminous of good quality; development projected, 1891.	Newcastle, Sydney, Melbourne, Adelaide, <i>Freemantle</i> , Mauritius, Diego Garcia, Batavia, Colombo.	
By lighters at Gage Road or Owen Anchorage.	British, at Albany.	None	Melbourne, Adelaide, <i>Albany</i> , Batavia.	Swan River to Perth, 12 miles distant, is only navigable for craft of less than 6 ft. draught.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports.

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Hobart, Tasmania.	Jan. 1885.	Australian . . . (Newcastle.)	1,000	1,500	\$5.84, f. o. b., from hulk alongside.	
Lannceton, Tasmania.	1886.	Bituminous . . . (Native.)				
Russell and Opua, Bay of Islands, New Zealand.	Sept. 1890.	Bituminous . . . (Native.)	Ample supply directly from mines.		\$4.87, alongside, temporarily: usual price, \$2.92 to \$3.40, alongside.	
Whangarei, New Zealand.	Nov., 1883.	New Zealand . . . (Whangerei.) Australian . . . (Newcastle.)	500	500	\$4.20. \$7.20. Delivery and stowing, 18c. to 25c.	
Auckland, New Zealand.	Aug., 1886.	Australian . . . New Zealand: Westport . . . Kawakawa . . . Waikato . . .	Abundant supply.		\$7.50, f. o. b. \$8.00, f. o. b. \$5.00, f. o. b.	
Napier, New Zealand.	1891.	New Zealand . . .				
Wellington, New Zealand.	Nov., 1885.	New Zealand . . . Australian . . . Welsh . . .	1,000 500 1 cargo.	1,600 No regular supply.	\$4.87. \$6.08. \$9.50.	
Nelson, New Zealand.	1891.	New Zealand . . .				
Lyttelton, New Zealand.	Nov., 1883.	New Zealand . . . Australian . . .	1,200 600	1,800 500	\$4.20. \$7.20. Delivery and stowing, 18c. to 25c.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters from shore, or by large barges or hulks brought alongside; rapid, using steam winch on hulk; 400 tons per day; no interruption.	None	None of consequence.	Adelaide, Melbourne, <i>Launceston</i> , Sydney, Newcastle, Dunedin.	
	None	Most important at Latrobe, near mouth of River Mersey, about 60 miles distant by rail.	Adelaide, Melbourne, Hobart, Sydney, Newcastle, Wellington.	Output of Tasmanian mines (1887), 28,000 tons.
By lighters at anchorage, Russell; or at wharf, Opuia, available for vessels of 18 ft. draught; good facilities; no interruption.	None	K a w a k a w a mines, 8 miles distant by rail; output fallen from 200 to 100 tons per day; will soon be exhausted. New mine on Kirikiri River, 5 miles from Russell, to be opened on large scale, 1891.	Tahiti, Pago Pago, Suva, Noumea, Brisbane, Newcastle, Sydney, <i>Whangerei</i> , Auckland, Wellington, Lyttelton, Dunedin.	The native coal possesses good steaming properties, but is too small to be burnt to advantage, except upon grates specially constructed for its use.
By lighters; slow; no interruption,	None	Whangerei mines; output, 27,000 tons, 1884.	Pago Pago, Suva, Noumea, <i>Bay of Islands</i> , Auckland, Wellington.	
From lighters by steam derricks; or from collier alongside; 750 tons per day; small vessels from coal chutes; no interruption in any case.	None	On Waikato River, in vicinity of Taupiri; Bridgewater mines, 40 miles south of Auckland; output of district, about 50,000 tons per year.	Tahiti, Pago Pago, Suva, Noumea, Newcastle, <i>Bay of Islands</i> , <i>Whangerei</i> , Wellington, Lyttelton, Dunedin.	Total output of all New Zealand mines amounted, 1890, to 635,000 tons; most extensive development in the Otago district, near Dunedin, and in Westport and Greymouth districts.
By lighters, at anchorage in roadstead; break-water under construction.	None	None	<i>Bay of Islands</i> , Auckland, Wellington, Lyttelton,	
From hulk brought alongside; 500 tons per day; liable to interruption by boisterous weather.	None	West Wanganui mines, about 100 miles distant by rail; unimportant; 4,000 tons per year.	<i>Bay of Islands</i> , Auckland, Napier, <i>Nelson</i> , Greymouth, Lyttelton, Dunedin.	
Wharves available for vessels of 18 ft. draught.	None	Nearest of consequence in vicinity of Westport, on River Buller.	<i>Bay of Islands</i> , Auckland, Wellington, Lyttelton, Greymouth.	
By lighters and baskets; rather slow; or by hulks alongside; 400 tons per day; no interruption in either case. Vessels of 24 ft. draught can go alongside railway jetties (1890).	None	Malvern Hills mines, about 30 miles distant; output, 24,000 tons per year; brown coal.	<i>Bay of Islands</i> , Auckland, Wellington, Dunedin.	Headquarters of New Zealand Shipping Co. at this port.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Pacific Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Dunedin, and Port Chalmers, New Zealand.	Nov., 1883.	New Zealand ...	1,250	1,900	\$4.20.	
		Australian	650		\$7.20.	
Bluff Harbor, New Zealand.	1885.	Bituminous			Delivery and stowing, 18c. to 25c.	
Greymouth, New Zealand.	1891.	Bituminous..... (Native.)	Ample supply directly from mines.			

Exhibit of coal to be had at the following Asiatic Station ports,

Petropaulovski, Kamchatka.	Sept., 1891.	Saghalin	500	500 to 1,500	As arranged, by courtesy of Russian admiral at Vladivostok. As arranged by courtesy of Russian Sealskin Co.	Storehouses are situated on west shore of harbor.
		Nanaimo.....	500	400 to 500		
Vladivostok, Siberia.	Aug., 1886.	Saghalin.....	Ample supply.		\$10.00, Mexican from Saghalin Coal Co.	
Otaru, Japan.	1889.	Poronai.....	Supply usually large, but sometimes cut off in winter by heavy snows on railroad.		\$2.02, f. o. b., average price for large quantities.	
Hakodate, Japan.	1886.	Takasima.....			\$7.50, Mexican, f. o. b.	
	1890.	Poronai.....	30,000 to 50,000 tons received per year.		\$4.22 to \$4.62.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters and baskets; moderately rapid; no interruption; 19 ft. at L.W. alongside railway wharf (1890).	None	Green Island, 6 miles distant; extensive deposits on Molyneux River; Clutha mine, and others; output, 150,000 tons per year. ²	Bay of Islands, Auckland, Wellington, Lyttelton, <i>Bluff Harbor</i> , Hobart.	
	None	Southland County; output, 18,000 tons, 1884.	Lyttelton, <i>Dunedin</i> , Greymouth, Hobart.	
At coal staithes, 26 ft. alongside at H. W., 16 ft. at L. W.; very rapid; or by coal vessel alongside at anchorage in roadstead.	None	Brunner mine, and others, on Grey River; output, 97,000 tons, 1884; Banbury mine, and others, Westport district, about 50 miles distant; output, 80,000 tons, 1884.	Auckland, Wellington, <i>Nelson</i> , Bluff Harbor, Hobart, Sydney, Newcastle.	Coal of the Westport and Greymouth districts is considered the best mined in New Zealand, and commands a higher price in New Zealand ports than the Newcastle coal of Australia.

together with the usual supply on hand, cost, etc.

By lighters of about 8 tons capacity; natives may be hired to load lighters; no interruption, except during winter.	Russian; also at Vladivostok.	None; nearest at Dni and elsewhere on Saghalin Island. Extensive deposits reported in Kamchatka, undeveloped.	Unalaska, <i>Hakodate</i> , Vladivostok, Yokohama.	Harbor seldom completely frozen over in winter.
By large lighters loaded by Korean natives; 11 tons per hour; no interruption, except during winter.	Russian; also at Petropaulovski.	In island of Yeso, Japan; also two mines in southern part of Saghalin island; lignitic coal of good quality. (<i>See Remarks.</i>)	Petropaulovski, <i>Otaru</i> , Hakodate, Nagasaki.	Harbor usually closed by ice from Christmas to beginning of April. Extensive deposits of anthracite and semi-anthracite have been discovered 60 miles from Vladivostok (1890); mines are to be developed, and a 40-mile branch from the main route of the Trans-Siberian Railway is to be built to afford transportation facilities.
	None	The most extensive at Poronai, 60 miles distant by rail; and at Iku-shunbetan; also at Sorachi, newly opened, 1890.	Vladivostok, <i>Hakodate</i> , Yokohama, Nagasaki.	Port decreed open, 1889, for export of coal, etc. Poronai-Otaru Railway runs directly to mines. Total output, 1890. Poronai and Iku-shunbetan mines, 167,000 tons.
By lighters; 150 to 200 tons per day; no interruption, as a rule.	None	As for Otaru....	Vladivostok, <i>Otaru</i> , Yokohama, Nagasaki.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.	
Yokohama, Japan.	Apr., 1888.	Takasima.....	.....	2,500	\$5.40.	About 1 mile, for large vessels; harbor improvements in progress.
	May, 1892.	Bituminous (Foreign.)	.....	9,250 tons imported, 1891.	.....	
Yokosuka, Japan.	May, 1892.	None for sale	None except Japanese Government supply.		.....	.....
Hiogo, and Kobe, Japan.	Nov., 1883.	Takasima..... Miiki..... Karatsu.....	2,000 800 750	2,500	\$6.00, stowed. \$5.00, stowed. \$5.75, stowed.	About $\frac{1}{2}$ mile.	
	1886.	Takasima.....	.....		\$7.00, Mexican, f. o. b.	
Nagasaki, Japan.	Jan., 1890.	Hizen:	Large supply; at least 10,000 tons at all times; 489,000 tons exported, 1889.	.....	.....	$\frac{1}{2}$ mile to 1 mile.
		Takasima.....					\$4.50 to \$6.50.
		Hirado.....					\$3.00 to \$4.25.
		Karatsu.....					\$4.25 to \$4.50.
		Tukuno.....					\$3.50 to \$4.00.
		Taku.....					\$4.00.
		Hatchinotsu.....					\$4.75.
		Yenokibana.....					\$4.25.
		Kogayama.....					\$3.25 to \$5.00.
		Chikago:				
Miiki.....	\$3.25 to \$5.50.						
Chikuzen.....	.....					
Buzen.....	\$4.00 to \$5.50.						
Jan., 1891.	Japanese.....	.....	515,000 tons exported, 1890.	.....	.....	.....
	Cardiff.....	.....	8,000 tons imported, 1890, for the use of foreign men-of-war.	.....	.....	.....
Kuchinotsu, Japan.	Sept., 1888.	Miiki.....	30,000	30,000	.....	.....
	May, 1892.	.....	.....	328,000 tons exported during 1891.	.....	.....
Misumi, Japan.	May, 1892.	Miiki.....	.....	10,000 tons exported during 1891.	.....	.....
Sasseho, Japan.	Dec., 1887.	.....	.....	.....	.....	.....
Karatsu, Japan.	May, 1892.	Karatsu.....	.....	Ample supply from mines of district.	.....	.....
Hakata, Japan.	1889.	Chikuzen.....	.....	Ample supply from mines of district.	.....	.....
Simonoseki, Japan.	May, 1892.	Nagato.....	.....	Ample supply from mines.	.....	.....
		Buzen.....					
		Chikuzen.....					

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; 200 tons per day; no interruption.	Japanese Govt. depot.	None of consequence.	Honolulu, Jaluit, Hakodate, <i>Kobe</i> , Nagasaki, Shanghai.	58,000 tons of Japanese coal, chiefly from Otaru and Nagasaki districts, transhipped and exported from Yokohama, 1890.
.....	Japanese, at dockyard.	None of consequence.	<i>See</i> Yokohama.	
By lighters of 15 tons capacity; rapid; liable to interruption during typhoon season, August to October.	British, by contract, 1,000 tons Takasima.		Hakodate, Yokohama, <i>Simonoseki</i> , Nagasaki, Shanghai.	226,000 tons of coal exported. 1889; 149,000 tons, 1890; decline due to direct shipments from the newly opened port of Simonoseki.
By lighters; 75 tons per hour, or as rapidly as stowing permits; no interruption.	Japanese; also British, 5,000 tons Cardiff.	Extensive; Takasima, Nakanosima, Hirado, and throughout northern provinces of Kiusiu. (<i>See</i> Remarks.)	Vladivostok, Hakodate, Yokohama, <i>Kobe</i> , <i>Kuchinotsu</i> , Tientsin, Chefoo, Shanghai, Foochow, Amoy, Keelung, Hong Kong, Manila.	The Fiusiu coal deposits lie in four principal basins, of which that of Takasima, near Nagasaki, is the most important, although lying chiefly under the sea; the mines are upon the islands of Takasima and Nakanosima, the respective outputs of which, for 1890, were 280,000 tons and 124,000 tons; the Chikuzen-Buzen basin is mined in a number of places, furnishing a total output of 780,000 tons per year (1890); the Karatsu district, province of Hizen, including the island of Hirado, furnishes about 25,000 tons per month; the Miiki coal field, province of Chikugo, 40 miles east of Nagasaki, has an output of about 1,200 tons per day, chiefly shipped from the port of Kuchinotsu. Miiki coal contains much sulphur.
.....	Nagasaki, Sassebo.	Miiki mines, in province of Chikugo. (<i>See</i> Remarks.)	As for Nagasaki.	
.....	Nagasaki, Sassebo.	Miiki mines	As for Nagasaki.	
.....	Japanese Govt. depot to be established at dockyard under construction.	As for Nagasaki.	As for Nagasaki.	
.....	None in immediate vicinity.	Extensive, in province of Hizen. (<i>See</i> Remarks, Nagasaki.)	Nagasaki, Sassebo, <i>Hakata</i> , <i>Simonoseki</i> , and as for Nagasaki.	Port decreed open, 1889, for export of coal, etc. 41,000 tons shipped during 1891.
.....	None	Extensive; provinces of Chikuzen and Buzen. (<i>See</i> Remarks, Nagasaki.)	Nagasaki, Sassebo, <i>Karatsu</i> , <i>Simonoseki</i> , and as for Nagasaki.	Port decreed open, 1889, for export of coal, etc. 1891.—Only 780 tons shipped during year.
.....	Japanese, on Osima, about 75 miles to Ed.	Extensive; provinces of Nagato, in Nippon, Chikuzen and Buzen, in Fiusiu.	Nagasaki, Sassebo, <i>Karatsu</i> , <i>Hakata</i> , and as for Nagasaki.	Port decreed open, 1889, for export of coal, etc. Upwards of 200,000 tons shipped during 1891, from <i>Simonoseki</i> and <i>Moji</i> (opposite).

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Chemulpo, Corea.	July, 1888.	Japanese: Takasima..... Wakamatsu..... (lignite)	30 100	} Uncertain {	\$9.60. \$6.04.	
Port Arthur, China.	Mar., 1889.	Kaiping		Very small supply.		
New Chwang, China.	Apr., 1885.	Kaiping		} 100 to 300 {	\$13.00, Mexican. Delivery, 50c.; stowing, 20c.	50 yards for gunboats.
Taku, China.	1891.	Kaiping				
Tientsin, China.	Oct., 1883.	Kaiping	} 4,000	2,500 {	\$3.90 to \$5.35; \$6.08 to \$9.12; usual range of prices.	100 to 500 yards.
		Takasima.....				
Chefoo, China.	Nov., 1883.	Cardiff.....	} 1,500	3,500 {	\$14.00.	½ mile to 3 miles.
		Australian.....			\$12.00.	
	1891.	Takasima..... Kaiping			6,000 tons received, 1890.		$8.00.
	June, 1892.	Cardiff.....	600		\$22.00, f. o. b.	
		Takasima.....	1,000		\$9.00, f. o. b.	
		Karatsu.....	500		\$8.00, f. o. b.	
Chinkiang, Yangtse River, China.	Oct., 1883.	Bituminous..... Anthracite	10,000 2,000	} 3,000 {	\$7.00. \$8.00. Delivery and stowing, per ton, 10c.	½ mile.....
Wuhu, Yangtse River, China.	1890.	Anthracite		14,000 tons exported, 1890, from sub-port of Tatung, 60 miles up river.	\$3.00.	
Kiukiang, Yangtse River, China.	1884.					
Hankow, Yangtse River, China.	Oct., 1883.	Native: Anthracite	} 40,000 tons	} exported, 1890.	\$6.25, f. o. b. \$2.75, at pile. Native coal at mines, \$1.00 to \$2.00.	100 ft. to ½ mile.
		Bituminous.....				
Iohang, Yangtse River, China.	Oct., 1883.	Native.....		Small supply.	\$6.00.	About 100 ft.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; very slow...	None	Extensive deposits of anthracite near Ping Yang, Tatung River, not regularly worked.	Nagasaki, <i>Chefoo</i> , Tientsin, Shanghai.	Total importation during year 1891 amounted to 2,100 tons.
By lighters; vessels of light draught can coal at wharf; harbor open throughout the year.	Chinese, to be established at dockyard.	None; Kaiping mines, near Tientsin, the nearest.	Tientsin, <i>Chefoo</i> .	Harbor improvements in progress, in connection with dockyard, include wet docks for vessels of 28 feet draught.
From lighters by coolies; very slow; liable to interruption by wind, Mar., Apr., Oct., Nov.; harbor closed throughout winter.	None	None regularly worked nearer than Kaiping mines, in vicinity of Tientsin.	Tientsin, <i>Port Arthur</i> , <i>Chefoo</i> .	City of New Chwang is 27 miles distant from the harbor (Yingtse).
Alongside Tonghu wharves of Chinese Engineering and Mining Co.	Chinese Govt. dockyard.	Kaiping mines. (See Tientsin.)	<i>Tientsin</i> , <i>Chefoo</i> .	
Alongside wharf, near coal yard; by baskets; no interruption; river usually frozen over in winter.	.....	Kaiping mines (bituminous), 85 miles distant by rail; output, 245,000 tons, 1888, to be increased; Chai Lang mines, near Peking (anthracite, small output).	<i>Taku</i> , <i>Chefoo</i> , Shanghai, Nagasaki.	Consular trade reports for 1888 show no importation of Japanese or other foreign coal; the extensive development of the Kaiping mines makes the import trade unprofitable.
By lighters; about 150 tons per day; liable to interruption in winter by gales from N. and NW.	None	None; some mining in southern and western portions of province of Shantung.	Tientsin, <i>Port Arthur</i> , Shanghai, Nagasaki.	In 1889, receipts of foreign coal (Cardiff, Australian, and Japanese), amounted to 18,000 tons, and of Chinese coal to 1,800 tons; in 1890, receipts were 6,000 tons foreign and 6,000 tons Chinese.
By lighters; very rapid; liable to interruption by NE. gales in winter.	None	Two mines about 20 miles distant.	<i>Chefoo</i> , Nagasaki, <i>Wuhu</i> , Shanghai, Keelung.	
.....	At Tatung, shipping port for Government mines at Chee-Chow.	Govt. mines (anthracite), at Chee-Chow, near Tatung; some private mines opened, 1888.	Shanghai, Chinkiang, Kiukiang, Hankow.	H. B. M., consul at Wuhu, 1890, reports discovery at Chee-Chow of bituminous coal, in addition to the anthracite mined there.
.....	See Wuhu ..	Bituminous, on Poyang Lake, worked intermittently.	Shanghai, <i>Chinkiang</i> , Wuhu, Hankow.	Good coal can be obtained at this port.
From lighters, by baskets; coolie labor; very rapid; no interruption, except by rains.	None	Extensive deposits throughout neighboring district; output increasing yearly.	Shanghai, Chinkiang, Wuhu, <i>Kiukiang</i> , Ichang.	Importation of foreign coal, during 1890, amounted to 5,680 tons. Native coal is extensively used by the river steamers.
From lighters, by coolies, using baskets; rapid; no interruption, except by rain.	None	Limited in extent; primitive methods employed.	See Hankow.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Shanghai, China.	July, 1885.	Anthracite	Small supply.	40,000	\$11.86, <i>ex ship.</i>	About $\frac{1}{2}$ mile.
		(U. S.)	1,000		\$10.64, <i>at pile.</i>	
		Australian:	15,000		\$6.39, <i>ex ship.</i>	
		Newcastle			\$7.60, <i>ex ship.</i>	
		Wollongong	30,000		\$5.47, <i>ex ship.</i>	
Japanese:	\$6.39, <i>at pile.</i>					
Takasima	\$5.35, <i>ex ship.</i>					
		Miiki	30,000	\$4.56, <i>ex ship.</i>		
		Karatsu				
	May, 1888.	Cardiff	10,000		\$12.40, Mexican.	
		Takasima			\$8.70, Mexican.	
		Australian				
Ningpo, China.	Sept., 1884.	Formosan	1,100	1,000	\$9.50, f. o. b.	$\frac{1}{2}$ mile
		Australian (Sydney)	500		\$11.50, f. o. b.	
Foochow, China.	June, 1888.	Formosan	50	500	\$6.50, Mexican.	About 1 mile.
		Takasima			\$8.00, Mexican.	
		Welsh			\$15.50, Mexican.	
		Australian				
Amoy, China.	May, 1888.	Australian	Ample supply.	1,500	\$11.50, Mexican, f. o. b.	$\frac{1}{2}$ mile to 2 miles.
		Formosan				
		Takasima	50			
Swatow, China.	Feb., 1891.	Japanese		31,000 tons imported, 1890.		
Keelung, Formosa.	May, 1888.	Bituminous (Native.)	4,000	4,000	\$4.30, Mexican.	$\frac{1}{2}$ mile
Tamsui, Formosa.	May, 1888.	Keelung	Brought from Keelung as required; should be contracted for in advance.			
Hong Kong, China.	Nov., 1889.	Welsh	8,000	70,000	\$14.50.	$\frac{1}{2}$ to $\frac{1}{4}$ mile
		Australian	10,000		\$9.50.	
		Japanese	20,000		\$6.50 to \$7.75.	
Canton, and Whampoa, China.	Apr., 1884.	Cardiff	No regular supply; brought from Hong Kong as required.			About \$1.00 per ton advance on Hong Kong prices.
		Takasima				
Saigon, Cochin China.	Dec., 1891.	Welsh				\$10.46;
		Japanese				\$7.30;
						current prices during year.
Bangkok, Siam.	Feb., 1886.	Cardiff	400			\$13.00, off city;
		Takasima	Supply irregularly maintained.				$8.00 to $9.00, off city; prices at anchorage outside bar, about $8.00 additional.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
Brought alongside in large lighters, and put on board by coolies at rate of 300 tons per day; no interruption.	Kiangnan Arsenal, about 3 miles above Custom-House, on west bank of Weesung River.	None	Tientsin, Chefoo, Nagasaki, <i>Chinkiang</i> , Wuhu, Hankow, Ningpo, Foochow, Amoy, Keelung, Hong Kong, Manila.	Importation of coal, 1891, amounted to 360,000 tons.
Poor facilities; by sampans; 15 tons per hour; liable to interruption by typhoons, August and September.	None	About 100 miles distant near Hang Chow.	Chefoo, Nagasaki, <i>Shanghai</i> , Foochow, Keelung.	
At anchorage, 9 miles below city, by lighters towed by steam launch from Pagoda Id.; lighters apt to be sunk if wind is high.	Chinese, at arsenal; 3,000 to 4,000 tons Formosan coal.	None; extensive at Keelung, Island of Formosa.	Shanghai, Ningpo, <i>Keelung</i> , Amoy, Hong Kong.	
By lighters; slow; no interruption.	Chinese, at Foochow.	None	Shanghai, Foochow, <i>Swatow</i> , Hong Kong.	
By lighters; sometimes interrupted by typhoons.	None	None	Shanghai, Keelung, <i>Amoy</i> , Hong Kong.	
By lighters of about 10 tons capacity; moderately rapid; liable to interruption by N. E. gales or by heavy rains.	Chinese, Govt. colliery, 6 miles east of Keelung, near Coal Harbor.	Extensive deposits, capable of large expansion by scientific working.	Nagasaki, Shanghai, Ningpo, <i>Tamsui</i> , Foochow, Amoy, Hong Kong, Manila.	Exportation of Keelung coal, 1891, amounted to 28,000 tons; increasing from year to year.
By lighters; liable to interruption; vessels exceeding 15 feet draught must lie outside bar.	*See Keelung.	Keelung mines, 25 to 30 miles distant.	See Keelung.	
By lighters; about 20 tons per hour; sometimes, but rarely, interrupted by high winds.	British, at dockyard; about 6,000 tons, Cardiff.	None	Nagasaki, Shanghai, Keelung, Amoy, <i>Swatow</i> , Manila, Singapore.	
From junks alongside; preferable to go to Hong Kong for coal.	Chinese, at dockyard, on Honan Id.; small supply.	None	As for Hong Kong.	
By lighters, in river off city; no interruption.	French, at dockyard.	Hongay mines, in vicinity of <i>Hai phong</i> , Tonquin.	Hong Kong, Manila, <i>Labuan</i> , Kuching, Bangkok.	Coal can always be obtained at this port. Total importation, 1891: Cardiff, 8,370 tons; Japanese, 7,070 tons.
Alongside wharf, or by lighters; vessels of greater draught than about 12 to 14 feet must lie outside bar, 25 miles distant.	Siamese Govt. maintains a supply of about 500 tons.	None	Hong Kong, Manila, <i>Saigon</i> , Labuan, Kuching, Singapore.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Manila, and Cavite, Luzon, Philippine Ids.	Feb., 1887.	Cardiff: Ferndale..... Ocean Merthyr..... Australian.....		5,000, in hands of dealers.	\$9.20, Mexican. \$9.00, Mexican. \$6.00, Mexican.	
Noilo, Panay, Philippine Ids.	Jan., 1891.					
Cebu, Cebu Id., Philippine Ids.	Jan., 1884.	Australian.....		Small supply maintained.		
Isabela, Basilan, Philippine Ids.	Jan., 1884.	None for sale...		Small supply for Govt. vessels.		
Santiago, Ponapi, Caroline Ids.	Nov., 1887.	None for sale...		Supply of about 1,000 tons maintained by Spanish Govt.		
Jaluit, Marshall Ids.	Apr., 1890.	Australian..... Westphalian.....	600 None	400	\$17.00, alongside.	
Victoria, Labuan Id., B. E. I.	Jan., 1888.	Borneo.....		5,000 tons supplied to vessels, 1887.		
Kuching, Sarawak.	Feb., 1887.	Bituminous..... (Native.)		Moderate supply maintained.	\$5.75, at pile; \$6.25, f. o. b.; (Mexican).	
Pontianak, Borneo.	June, 1888.	English..... Native.....			\$11.76. \$10.54.	
Banjermassin, Borneo.	June, 1888.	English..... Native.....			\$11.43. \$4.87.	
Pulo Laut, Borneo.	Feb., 1887.	Bituminous..... (Native.)		Supply uncertain.		
Koti, Borneo.	June, 1888.	Bituminous..... (Native.)		Supply uncertain.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters: large vessels usually anchor in bay, 3 miles from Manila, or off Cavite, 10 miles distant; liable to interruption, August to November.	Spanish, at arsenal, Cavite; 6,000 to 7,000 tons.	Deposits on island of Luzon, undeveloped; coal of poor quality.	Nagasaki, Shanghai, Hong Kong, <i>Iloilo</i> , Labuan, Ternate, Macassar, Batavia, Singapore.	Importation of coal at Manila, 1890, amounted to 65,000 tons, of which 37,000 tons were Japanese, 20,000 Australian, and 8,000 Cardiff.
By steam lighter at anchorage off bar, for vessels of more than 15 ft. draught; seldom interrupted.	Spanish, at Cavite.	None	Manila, <i>Cebu</i> , and as for Manila.	Coal can be obtained; 3,000 to 6,000 tons imported per year.
By lighters, at anchorage off fort.	Spanish, at Cavite; also at Isabela.	Deposits on island undeveloped.	Manila, <i>Iloilo</i> , and as for Manila.	Importation of coal, 1891, amounted to 2,800 tons.
	Spanish, Govt. depot.	None	Manila, <i>Iloilo</i> , <i>Cebu</i> , Labuan.	
Spanish Govt. vessels go alongside hulk on smooth days; at other times lighters are used.	Spanish, in hulk <i>Maria de Molina</i> .	None	Manila, <i>Jalut</i> , Matupi.	Coal obtainable at times from newly arrived colliers.
By lighters.....	German contract; 400 tons to be kept on hand.	None	Honolulu, Pago Pago, Suva, <i>Matupi</i> , Yokohama.	
At coal pier, 15 to 18 ft. alongside; or by lighters; no interruption.	British, 2,000 to 3,000 tons.	Extensive deposits on island irregularly worked; several companies have failed.	Hong Kong, Manila, Saigon, <i>Kuching</i> , Singapore, Batavia.	
	Sarawak Govt. depot.	Govt. mine, 3 miles from Sading; output 1,000 tons per month; deposits at Lesong Mountain, to be developed.	Hong Kong, Manila, Saigon, Labuan, <i>Pontianak</i> , Singapore, Palembang, Batavia.	
	Netherlands Govt. depot.	Kapuas River coal fields; extensive deposits from Sintang to Bunut; hard coal of good quality.	Saigon, Labuan, <i>Kuching</i> , Singapore, Palembang, Batavia, Banjermassin.	
	Netherlands Govt. depot.	Pengaron mines, 57 miles distant, up Martapura River; 120 tons per day; bituminous.	Kuching, Singapore, Pontianak, Batavia, Surabaya, <i>Pulo Laut</i> , Macassar.	
		Bituminous, on island; poor quality.	As for Banjer-massin.	
		On Mahakkan River, near Samarinda, about 20 miles distant; bituminous; poor quality.	Surabaya, Macassar, <i>Pulo Laut</i> , Tontoli.	On Bern River, about 200 miles north, there are mines near Sambiling; bituminous coal of good quality.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.	
Surabaya, Java.	Aug., 1885.	Cardiff.....		3,000	\$10.00, f. o. b.		
		Australian.....			\$8.00, f. o. b.		
Batavia, Java.	Feb., 1887.	Cardiff.....	} Large supply.		\$11.25.	2 miles for vessels anchored in roads.	
		Newcastle.....					\$8.80 to \$8.40.
		Australian.....					
Palembang, Sumatra.	June, 1888.	English.....			\$15.73.		
		Native.....			\$12.53.		
Singapore, Straits Settlements.	Sept., 1889.	Cardiff.....	51,000	} 35,000 to 100,000, exclusive of S. S. Co.'s coal.	\$11.75, Mexican, f. o. b., at wharf.	At wharves, 40 or 50 yards; at anchor in roads, about 1½ miles.	
		West Hartley.....	1,500				
		Australian.....	16,700				\$9.00, Mexican, f. o. b., at wharf.
		Japanese.....	9,000				\$7.00 to \$9.00, Mexican, f. o. b., at wharf.
		Newcastle Sarawak.....	} 10,000				\$6.50 to \$8.00, Mexican, f. o. b., at wharf.
		Borneo Sumatra.....					
			Bengal.....			\$6.00 to \$9.00, Mexican, f. o. b., at wharf.	
		Oct., 1889.	Cardiff (Ocean Merthyr)			\$11.75, Mexican, stowed, at anchorage in roads.	
		1891.	Cardiff (Cory's Merthyr)			\$9.37, f. o. b.; Austrian Govt. contract for the year.	
		1892.	Cardiff.....			\$7.66, on wharf, \$7.79, stowed, Tanjong Pagar; \$8.03, alongside, \$8.15, stowed, in roads; German Govt. contract to April, 1893.	
Deli, Sumatra.	June, 1888.	English.....			\$14.44.		
Penang, Straits Settlements.	Jan., 1887.	Cardiff.....	4,500	5,000	\$10.50, Mexican.	2 miles from sheds on Penang Id.; 4 miles from sheds at Prye River Dock.	
Acheen, and Oeleleh, Sumatra.	Feb., 1886.	None for sale ...	No regular supply.				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
At anchorage in roads; by coolies, from lighters of 30 tons capacity; no interruption; coal weighed and tallied on shore.	Netherlands Govt., at dockyard.	.....	Amboyna, Kupang, Buton, Macassar, <i>Banjerassin</i> , Batavia, Singapore.	
By lighters, at anchorage in roads; rapid, liable to interruption in wet season, Nov. to Mar.; or alongside wharf, Tanjong Priok; rapid as stowing permits.	Netherlands Govt., at Tanjong Priok; supply large, Australian; depot formerly located at Onrust Island.	None	Manila, Saigon, Labuan, Kuching, Macassar, Surabaya, <i>Palembang</i> , Singapore, Penang, Colombo, Albany.	Importation of coal at Batavia amounts to about 200,000 tons per year.
.....	Netherlands Govt. depot.	None	Surabaya, Batavia, <i>Singapore</i> .	
Alongside wharves, available for largest vessels, Tanjong Pagar Dock Co.'s and New Harbor docks; rapid as stowing permits; no interruption; or by lighters at anchorage in roads, if preferred; rarely interrupted.	British, on Pulo Brani, temporarily leased to Tanjong Pagar Dock Co.; about 2,500 tons on island; British, French, German, and Austrian contracts.	None	Hong Kong, Manila, Saigon, Labuan, Kuching, Pontianak, Macassar, Surabaya, Batavia, <i>Palembang</i> , Deli, Penang, Port Blair, Moulmein, Rangoon, Calcutta, Madras, Colombo.	Importation of coal, 1887, amounted to 295,000 tons, of which Great Britain supplied 240,000 tons; Japan, 25,000; Australia, 23,000; Sarawak, 5,000; and other countries, 2,000.
.....	Netherlands Govt. depot.	None	Singapore, <i>Penang</i> , Port Blair.	
By lighters, at anchorage off the Fort point, for large vessels; small vessels, close to town; rarely interrupted.	None	None	Batavia, Singapore, <i>Deli</i> , Port Blair, Moulmein, Rangoon, Calcutta, Madras, Colombo.	Coal-sheds at Pulo River Dock, Province Wellesley, have storage capacity for 10,000 tons (1891).
.....	Netherlands, on Pulo Brasse; 7,000 tons, Cardiff and Newcastle.	None	Penang, <i>Deli</i> , Port Blair.	Govt. supply on Pulo Brasse only for use of blockading squadron employed in the Achinese war; a commercial coaling station (10,000 tons) on Pulo Way, to be subsidized.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Padang, Sumatra.	June, 1888.	English.....	3,000	3,000	\$14.72.	If at wharf, 100 yards.
		Native.....			Govt. supply.		$12.83.
Port Blair, Andaman Ids.	1891.	Cardiff (owned by British Govt.)				
Moulmein, British Burmah.	Feb., 1890.	Bituminous		22,000		
Rangoon, British Burmah.	Oct., 1883.	Welsh.....	2,500	3,000	\$3.20.	About 1 mile to usual anchorage.
		English.....				
		Scotch.....				
		Australian.....				
	Feb., 1890.	Bituminous (not specified)		12,000		
Bassein, British Burmah.	Oct., 1883.	Welsh.....	600	5,000	\$9.20 to \$10.50. \$7.36 to \$8.28.	½ mile to 1½ miles.
		English.....	1,700			
		Scotch.....	2,300			
		Australian.....	1,700			
	Feb., 1890.	Bituminous (not specified)		1,000	Stowing, per ton, 46c.	
Akyab, British Burmah.	Feb., 1890.	Bituminous.....		1,300		½ mile.....
Chittagong, India.	Oct., 1883.	Bituminous.....		300 (Owned by Netherlands-India S. S. Co.)	\$11.74, stowed.	
Calcutta, India.	Oct., 1883.	Bituminous:		25,000, including amounts owned by S.S. lines.	\$9.30. \$4.60 to \$5.50. \$3.60 to \$4.60.	½ to ¾ mile...
		Welsh.....	4,000			
		Australian.....	500			
		Native.....	1,000			
	Feb., 1890.			15,000, available.		
Madras, India.	Nov., 1883.	Welsh.....		1,000	\$10.94, stowed.	About ½ mile.
		Australian.....	400			
	Feb., 1890.			2,000		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
At wharf, or by lighters; slow; large vessels lie outside bar; liable to interruption by high winds, Oct. to Mar.	Netherlands Govt. depot.	Durian mines, on Ombillen River, about 40 miles distant; good quality; also near Benkulen, 200 miles down coast.	<i>Batavia</i> , Colombo.	Harbor works for shipment of Ombillen River coal to be constructed at Brandywine Bay, near Padang.
By lighters; no interruption.	British	None	Singapore, Penang, Moulmein, Rangoon, <i>Bassein</i> , Calcutta, Madras, Colombo.	Coal supply is for British naval vessels; other vessels can not depend upon obtaining more than a small quantity.
By lighters, 300 tons per day, at moorings off town; available for vessels of 22 feet draught; larger vessels anchor off Amherst, 24 miles below.	British, at Rangoon, by contract.	None	Penang, Port Blair, <i>Rangoon</i> , Bassein, Akyab, Calcutta.	
By coolies with baskets, from dhows of about 20 tons capacity; 300 to 500 tons per day; river current sometimes causes delays; vessels can coal at wharves, if preferred.	British, by contract; 2,000 to 2,500 tons Welsh and English.	None	Penang, Port Blair, <i>Moulmein</i> , Bassein, Akyab, Calcutta.	
By lighters; moderately rapid; no interruption.	British, at Rangoon, by contract.	None	Penang, Port Blair, Moulmein, <i>Rangoon</i> , Akyab, Calcutta.	
By lighters; 200 tons per day; liable to interruption, April to October.	None	None	Moulmein, Rangoon, Bassein, <i>Chittagong</i> , Calcutta.	
By lighters; slow; no interruption.	British, at Calcutta.	None	Akyab, <i>Calcutta</i> .	
By lighters of about 20 tons capacity; rapid; 300 to 500 tons per day; liable to interruption in months of May and October.	Indian Govt. depot.	Extensive in Bengal; output (1889), 1,641,000 tons, of which coal fields of Burdwan supplied 936,000 tons.	Singapore, Penang, Port Blair, Moulmein, Rangoon, Bassein, Akyab, <i>Chittagong</i> , Madras, Trincomalee, Galle, Colombo.	The only wharf accommodation for large vessels (1891) is afforded by the Port Commissioners' jetty; upon the completion of the Kidderpore wet docks there will be ample accommodation for the largest vessels to coal at wharves in the docks.
In bags from lighters; 150 to 200 tons per working day; liable to interruption in May, October, November, and December.	French, at Pondicherry.	None	Singapore, Penang, Port Blair, Calcutta, <i>Pondicherry</i> , Trincomalee, Galle, Colombo.	

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Pondicherry, India.	Aug., 1883.	Welsh	Considerable supply.			About $\frac{1}{2}$ mile.
Negapatam, India.	July, 1883.	Welsh	5,000 (Owned by Railway Co.)			
Trincomalee, Ceylon.	Feb., 1890.	Welsh		5,000	Sold only by courtesy.	
		English				
Point de Galle, Ceylon.	Sept., 1883.	Welsh	15,000	20,000	\$9.25, stowed.	$\frac{1}{2}$ mile to 1 mile.
		English .....					2,000
	1891.	Welsh (Cory's Merthyr)			\$8.27, f. o. b.; Austrian Govt. contract for the year.	
	1892.	Welsh			\$6.57, alongside; \$6.81, stowed; German Govt. contract to April, 1893.	
Colombo, Ceylon.	Dec., 1886.	Welsh	100,000		\$8.64. \$8.03.	500 to 1,000 yards.
		English				
	Oct., 1888.	Welsh			\$9.12.	
	1891.	Welsh (Cory's Merthyr)			\$8.27, f. o. b.; Austrian Govt. contract for the year.	
	1892.	Welsh			\$6.57, alongside; \$6.81, stowed; German Govt. contract to April, 1893.	
Diego Garcia, Chagos Ids.	Aug., 1887.	Cardiff	3,000 (Orient Line own $\frac{1}{3}$ of total supply.)	3,000	\$10.95 to \$11.68, f. o. b.	Depends upon anchorage; coal stored in hulks.
Mahé, India.	1888.					
Bombay, India.	Dec., 1886.	Welsh	40,000		\$7.20. \$6.40.	$\frac{1}{2}$ mile to 4 miles.
		English				
	1891.	Welsh (Cory's Merthyr)			\$7.79, f. o. b., Austrian Govt. contract for the year.	
Kurrachee, India.	Dec., 1886.	Cardiff	6,000; 1,200 in hands of dealers.	6,000	\$7.80, at pile; delivery and stowing, 39c.	
		West Hartley				
Bunder Abbas, Persia.	June, 1883.	Bituminous	700	700	\$10.00.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; liable to interruption in bad weather.	French, at arsenal.	None	Calcutta, <i>Madras</i> , Negapatam, Colombo.	
By lighters; poor facilities; liable to interruption in bad weather.	French, at Pondicherry; British, at Trincomalee.	None	<i>Madras</i> , <i>Pondicherry</i> , Galle, Colombo.	
By lighters of 50 tons capacity, or of 8 to 10 tons capacity; 200 tons per day; no interruption.	British, at dockyard.	None	<i>See Point de Galle</i> .	All coal at this port is property of British Government.
By lighters; coal bagged on shore; rapid; ground swell from SW. winds sometimes causes delay.	British, at Trincomalee.	None	Albany, Batavia, Singapore, Penang, Padang, Port Blair, Calcutta, <i>Madras</i> , <i>Colombo</i> , Bombay, Kurrachee, Diego Garcia, Mauritius, Seychelles, Zanzibar, Aden.	
By lighters at moorings; coal in bags; 500 tons per day; no interruption, except by heavy rains.	British, by contract; British Govt. depot at Trincomalee.	None	<i>See Point de Galle</i> .	Coal depots are maintained at this port by all the principal steamship lines to the East.
By lighters, from Orient Line or from private dealer; Orient Line keeps nine 75-ton lighters loaded at all times; 13 tons per hour; seldom interrupted.	None	None	Albany, <i>Galle</i> , Colombo, Seychelles, Mauritius, Zanzibar, Aden.	1890—Orient Line steamers no longer stop for coal at Diego Garcia.
.....	French Govt. depot.	None	<i>Colombo</i> , Bombay.	
By lighters, or 50-ton dhows; 300 tons per day; liable to interruption, May to November.	British, at dockyard.	None	Colombo, <i>Mahé</i> , <i>Kurrachee</i> , Muscat, Aden.	
By lighters; liable to interruption, June to Sept.	Indian Govt. depot at dockyard (Manora).	Khost coal field, in Beloochistan; 7,000 tons output, 1889.	Colombo, <i>Bombay</i> , Muscat, Aden.	Large importation of coal at this port for use on government railways.
Alongside hulk owned by British India Steam Navigation Co.; coaling done by ship's crew; no interruption.	None	None	Kurrachee, Bushire, Bussorah, <i>Muscat</i> , Aden.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following Asiatic Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Bushire, Persia.	Nov., 1886.	Bituminous.....	400	Not to be depended upon.	\$11.57.	3 to 6 miles ..
Bussorah, Asiatic Turkey.	July, 1883.	Cardiff.....	2,800	2,800	\$11.60, stowed.	.....
Muscat, Arabia.	Oct., 1886.	Cardiff..... (Owned by Indian Govt.)	Ample supply. (For British cruisers on station.)		Sold only by courtesy of British consul; paid for through diplomatic channels.	
Aden, Arabia.	May, 1889.	Cardiff.....		30,000	\$9.40, stowed.	Inner harbor, $\frac{1}{2}$ mile; outer, 2 miles.
	1891.	Cardiff (Gory's Merthyr)			\$9.00, f. o. b.; Austrian Govt. contract for the year.	
	1892.	Cardiff.....			\$7.54, alongside; \$7.79, stowed; German Govt. contract to April, 1893.	
Obok, Tadjarra Bay, N. E. Africa.	1888.	.....			
Perim Id., Strait of Bab-el-Mandeb.	1891.	Cardiff.....	Large supply.		Usually the same as at Aden.	
Suakim, Egypt.	May, 1885.	Cardiff.....	Supply in hands of contractor for British men-of-war and transports.		\$11.56, stowed.	
Jeddah, Arabia.	Jan., 1887.	Cardiff.....	Small supply.		Offered at \$10.95 for one year's contract to U. S. vessels.	
Suez, Egypt.	Oct., 1885.	Cardiff.....	3,000	3,000	\$8.52, stowed.	
	1891.	Cardiff (Cory's Merthyr)			\$8.52, f. o. b.; Austrian Govt. contract for the year.	

Exhibit of coal to be had at the following European Station ports,

Lerwick, Shetland Ids.	1891.	Bituminous..... (not specified)	7,800 tons received during year.			
Stromness, Orkney Ids.	1891.	.....			
Inverness, Scotland.	1891.	Scotch.....	140,000 tons received during year.			

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>Italics</i> .)	Remarks.
By native craft of about 15 tons capacity each; 100 tons in 12 hours, with smooth sea; liable to interruption.	Indian Govt. maintains a small depot.	None	Kurrachee, Bunder Abbas, <i>Bussorah</i> .	
By iron barges or lighters; no interruption.	None	None	<i>Bushire</i> , Bunder Abbas, Kurrachee.	Coal importation (1890), 8,580 tons.
By lighters of about 12 tons capacity; coal bagged on shore; 100 tons per day; liable to interruption, especially by N.W. gales in winter.	Indian Govt. depot.	None	Bombay, Kurrachee, <i>Bunder Abbas</i> , Aden.	Coal hulk formerly maintained here by British India Steam Navigation Company has been withdrawn.
By large lighters alongside; coal in bags; 300 tons per day; occasional delays from rough water during S.W. monsoon, June, July, and August.	British, by contract. French, at Obok.	None	Mauritius, Zanzibar, Seychelles, Diego Garcia, Colombo, Bombay, Kurrachee, Muscat, <i>Perim</i> , Suez, Port Said.	Dredging operations in progress for improvement of inner harbor, 1891.
.....	French Govt. depot.	None	<i>Aden</i> , and as for Aden.	
By lighters, or alongside coal hulk; 25 to 60 tons per hour; harbor protected against both monsoons.	British, at <i>A d e n</i> ; French, at Obok.	None	<i>See Aden</i> .	
.....	British, at <i>A d e n</i> ; French, at Obok.	None	<i>Aden</i> , <i>Perim</i> , Suez, Port Said.	Importation of coal, 1890, amounted to 2,600 tons all from Great Britain; valued at \$8.72 per ton.
Poor facilities; no protection; liable to interruption by northerly winds, especially December to March.	British, at <i>A d e n</i> ; French, at Obok.	None	<i>Aden</i> , <i>Perim</i> , Suez, Port Said.	Importation (1890), 1,220 tons, valued at \$12.17 per ton.
By large lighters from piles at Port Ibrahim; discharged and stowed by natives; facilities inferior to those at Port Said.	None	None	<i>Aden</i> , <i>Perim</i> , <i>Port Said</i> , Alexandria, Beirut, Piræus, Malta.	Coal imports, 19,000 tons, 1890; Port Said prices are usually less than those at Suez, by from \$2.43 to \$2.92 per ton.

together with the usual supply on hand, cost, etc.

From coal hulk <i>Havana</i> , in Lerwick Harbor.	None	None	Reikiavik, Bergen, <i>Stromness</i> .	
From hulk, 15 tons per hour.	None	None	Stornoway, <i>Lerwick</i> , Aberdeen.	
At anchorage, Kessock Roads, for large vessels.	None	None	Stornoway, <i>Lerwick</i> , <i>Stromness</i> , Oban, Aberdeen.	Vessels 160 feet long by 28 feet beam by 15 feet draught can pass through the Caledonian Canal.

COALING, DOCKING AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Aberdeen, Scotland.	1886.	Scotch.....	1,500	1,500	\$2.50 to \$3.50, stowed.	
Montrose, Scotland.	1891.		Receipts by sea during year, 48,400 tons.			
Dundee, Scotland.	Sept., 1883.	Scotch..... English.....	Large supply on hand or available.		\$2.25 to \$2.75; \$3.75 to \$4.25; stowing, 24c. to 37c., extra.	
Kirkcaldy, and Burntisland, Scotland.	Oct., 1891.	Scotch..... (Fifeshire)	Large supply; 700,000 tons shipped per year from Burntisland Docks.		\$2.19, f. o. b., in docks; stowing, 16c.	
Alloa, Grangemouth, and Bo'ness, Scotland.	Dec., 1891.	Scotch..... (Stirlingshire and Clackmannanshire)	Large supply; about 125,000 tons shipped per month.			
Granton, Scotland.	Dec., 1891.	Scotch..... (Midlothian)	Large supply available by rail; shipped as received, about 10,000 tons per month.			
Leith, Scotland.	June, 1888.	Scotch..... (Midlothian)	Large supply on hand or available by rail.		\$1.70, f. o. b., in docks, from chute. Coaling in roads, by special arrangement, 50c. to \$1.00 extra.	
	July, 1891.	Beat Slamannan Navigation (Stirlingshire)			\$3.04, alongside, Leith Roads.	
Blyth, England.	Dec., 1891.	Northumbrian..	Large supply; about 130,000 tons shipped per month.		\$2.19 to \$2.43, f. o. b.	
North Shields, England.	Dec., 1891.	Northumbrian.. (West Hartley, etc.)	Large supply.		\$2.19 to \$2.43, f. o. b. in docks; by lighters, 12c. extra.	
South Shields, England.	Dec., 1891.	Northumbrian.. Durham.....	Large supply.		\$2.19 to \$2.43, f. o. b. in docks; by lighters, 12c. extra.	
Newcastle-on-Tyne, England.	June, 1888.	Northumbrian.. Durham..... Cardiff.....	Large supply. Small quantity.		\$1.95, f. o. b., in river.	
	Dec., 1891.	Northumbrian.. Durham.....			\$2.31 to \$2.55, f. o. b., in river.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
In Victoria Docks; rapid; or by lighters; liable to interruption in latter case during winter.	None	None	Inverness, <i>Montrose</i> , Dundee, Leith.	Total receipts by sea, during 1891, amounted to 439,000 tons.
	None	None	Aberdeen, <i>Dundee</i> .	
At wharves in docks; very rapid; or by lighters in roads; liable to interruption in latter case during winter.	None	Extensive, in Fifeshire.	Aberdeen, <i>Montrose</i> , Leith, Newcastle.	
At coaling staithes in Burntisland Docks, very rapid; large vessels at anchorage in roadstead, by lighters or coal vessel alongside.	None	Extensive, in Fifeshire; collieries 8 to 25 miles distant.	Aberdeen, Dundee, Grangemouth, <i>Leith</i> , Blyth, Newcastle.	Total output of Fifeshire mines (1890), 3,122,000 tons.
Best facilities are those afforded by Caledonian Railway Docks, Grangemouth, available for vessels of 21 ft. draught entering at H. W.; lock 350 ft. long; entrance, 54 ft. wide.	None	Extensive, in Stirlingshire, Clackmannanshire, and West Lothian.	Aberdeen, Dundee, Burntisland, <i>Granton</i> , Leith, Blyth, Newcastle.	Coal production, 1890: Stirlingshire, 1,498,000 tons; Clackmannanshire, 403,000 tons; West Lothian, 782,000 tons.
Alongside pier; excellent facilities for vessels of light draught; only 9 to 13 feet in harbor at L. W.	None	Extensive, in Midlothian; yearly output about 900,000 tons.	<i>See Leith.</i>	
In docks, as arranged by contractor; from coal chutes by carloads; coal should be ordered two days beforehand; no regular facilities for coaling by lighters.	None	Extensive, in Midlothian; collieries 10 to 25 miles distant.	Aberdeen, Dundee, <i>Burntisland</i> , Grangemouth, Blyth, N. Shields, S. Shields, Newcastle.	
Excellent facilities for rapid coaling from high level staithes, with 29 feet alongside at H. W., but at L. W. greatest depth is about 14 feet.	None	Extensive; 20 collieries within 4 miles.	<i>Leith</i> , N. Shields, S. Shields, Newcastle, Sunderland, Hartlepool, Middlesboro', Hull.	Coal production of Northumberland for 1890 amounted to 9,446,000 tons.
In Albert Edward or Northumberland Docks; most improved modern facilities for rapid coaling; no interruption; or by lighters in river, if preferred.	None	Extensive; both in Northumberland and Durham; West Hartley and other important collieries.	<i>See Newcastle.</i>	
In Tyne Docks; best facilities; very rapid; no interruption; by lighters in river, if preferred.	None	Extensive, both in Northumberland and Durham.	<i>See Newcastle.</i>	
By lighters in river, off Felling Station; tide occasions delays; preferable to coal in docks, N. or S. Shields.	None	Extensive, both in Northumberland and Durham.	Dundee, Leith, Blyth, <i>Sunderland</i> , Hartlepool, Middlesboro', Hull.	Yearly shipment of coal from the Tyne ports amounts to 10,000,000 tons.

COALING, DOCKING AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Sunderland, England.	Jan., 1891.	Durham.....	Large supply; about 4,000,000 tons shipped annually.		\$2.80, f. o. b.	
	July, 1891.	Durham.....			\$6.04, f. o. b.	
	Dec., 1891.	Durham.....			\$2.49, f. o. b.	
Hartlepool, and West Hartlepool, England.	Dec., 1891.	Durham.....	Large supply; about 65,000 tons shipped per month.		\$2.49, f. o. b.	
Middlesborough, England.	Jan., 1891.	Durham..... South Yorkshire	Large supply on hand or available.		\$2.49 to \$3.16, f. o. b., in docks; stowing, 24c.	
Hull, England.	June, 1888.	South Yorkshire (screened) Derbyshire Cardiff.....	Large supply.		\$2.68, f. o. b., in river.	
		Dec., 1891.	South Yorkshire	Small quantity.		\$2.31 to \$2.43, in docks.
Goole, England.	Dec., 1891.	South Yorkshire (steam) West Riding....	Large supply; 50,000 to 70,000 tons shipped per month.		\$2.31 to \$2.43.	
Grimsby, England.	July, 1891.	South Yorkshire (steam)	Large supply available.		\$2.43 to \$2.55, in docks.	
	Dec., 1891.	South Yorkshire (steam) Derbyshire.....				
Boston, England.	1891.	South Yorkshire Nott'ghamshire.				
King's Lynn, England.	1891.	South Yorkshire Nott'ghamshire.	Large supply available by rail.			
Great Yarmouth, England.	1891.		Receipts by sea during year, 62,500 tons.			
Harwich, and Ipswich, England.	1891.		Receipts by sea during year, 80,000 tons.			

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
Excellent facilities; extensive docks, covering 44 acres, entered by sea-lock, 480 feet long and 90 feet wide, with 27 feet on sill at H. W.; no interruption.	None	Extensive	Leith, Blyth, <i>N. Shields</i> , <i>S. Shields</i> , Newcastle, Hartlepoons, Middlesboro', Hull.	Total coal production of the county of Durham for the year 1890 was 30,265,000 tons.
At coaling staithes in docks; rapid; no interruption.	None	Extensive; Durham coal fields.	Blyth, <i>N. Shields</i> , <i>S. Shields</i> , Newcastle, Sunderland, <i>Middlesboro'</i> , Hull.	
By lighters in River Tees, or in Middlesborough Docks.	None	None in immediate vicinity; extensive in Durham.	<i>See</i> Hartlepoons.	
By lighters in river; must discharge powder to enter docks.	None	None in immediate vicinity; extensive in South Yorkshire.	Newcastle, Sunderland, Hartlepoons, Middlesboro', Gool, <i>Grimaby</i> , Gravesend.	Receipts of South Yorkshire coal at Hull, 1891, amounted to 2,386,000 tons.
In docks, available for vessels of 22 ft. draught, entering at H. W.; Ouse Dock Lock is 264 ft. long, and 58 ft. wide at entrance; Victoria Lock, 500 ft. long by 47 ft. wide at entrance.	None	Extensive; West Riding of Yorkshire, and Barnsley district, South Yorkshire.	<i>See</i> Hull.	Total coal production of Yorkshire, during the year 1890, amounted to 22,339,000 tons.
At coaling staithes in Royal or Alexandra Docks; or by lighters outside; permission must be obtained to enter docks with powder.	None	None	<i>See</i> Hull.	Monthly shipments from <i>Grimaby</i> amount to 40,000 to 45,000 tons.
In docks at coaling staithes, or by lighters in roadstead, 6 miles below.	None	None	Hull, <i>Grimaby</i> , <i>King's Lynn</i> , Gravesend.	
In docks, by hydraulic cranes; rapid; no interruption; or by lighters in Lynn Roads.	None	None in immediate vicinity; direct rail communication from docks to Nottingham and Barnsley coal districts.	Hull, <i>Grimaby</i> , <i>Boston</i> , Yarmouth, Gravesend.	Coal output of Nottinghamshire, 1890, amounted to 6,862,000 tons.
By lighters in Yarmouth Roads; vessels of 16 feet draught can enter harbor at H. W.	.....	None	Hull, <i>Harwich</i> , Gravesend or Tilbury, London.	
By lighters in Harwich Harbor or in Felixstowe Dock; or at Parkeston Quay, property of Great Eastern Railway Company; 27½ feet alongside at H. W., 16 feet at L. W.	.....	None	Hull, <i>Yarmouth</i> , Gravesend or Tilbury, London.	Vessels of 17½ ft. draught can go up to Ipswich at H. W., and enter docks through lock 300 ft. long, 50 ft. wide at entrance.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Tilbury, England.	Dec., 1891.	Cardiff Durham Yorkshire Newcastle (Hartley)	} Large supply available.	}	\$3.89 to \$4.14. \$3.89 to \$4.14. \$3.65 to \$3.89.	
Gravesend, and Northfleet, England.	July, 1886.	Cardiff (Nixon's Navn.)				\$4.62.
London, England.	Dec., 1891.	Cardiff Durham Yorkshire Lancashire Newcastle (Hartley) Scotch	} Large supply; upwards of 12,000,000 tons received per year.	}	\$3.89 to \$4.14. \$3.89 to \$4.14. \$3.65 to \$3.89.	
Chatham, and Sheerness, England.	1891.					
Dover, Folkestone, and Newhaven, England.	1892.		Total receipts by sea during 1891 amounted to 173,000 tons.			
Portsmouth, and Gosport, England.	1890.		Large supply.			
Southampton, England.	Aug., 1889.	Cardiff	Large supply.		\$5.48.	
Cowes, Isle of Wight, England.	Nov., 1889.	None for sale....	No supply of consequence.			
Portland, England.	Nov., 1889.	Cardiff	Large supply.		\$4.38.	
Dartmouth, England.	Nov., 1889.	Cardiff North of Engl'd	7,000	7,000	\$4.38, f. o. b. \$4.26, f. o. b.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
At coaling jetty, Tilbury Docks, or by lighters in river.		None	Hull, Grimsby, King's Lynn, Harwich, London, Antwerp, Boulogne, Southampton.	Properly included in port of London, which extends to the Naze, near Harwich.
By lighters in river		None	As for Tilbury.	See Remarks, Tilbury.
Preferably in Royal Victoria and Royal Albert Docks, if permission be granted to enter with powder; or by lighters in river; Welsh and South Yorkshire coal brought by rail to ship's side in docks.		None	See Tilbury.	
	At H. B. M. dockyard, Chatham; no facilities at Sheerness dockyard for large vessels.	None	As for Tilbury.	Construction of a coaling jetty for large vessels at Sheerness dockyard is projected.
	None	Deposits near Dover, at Channel Tunnel borings; to be developed.	London, Calais, Boulogne, Dieppe, Southampton.	These ports afford coaling facilities only for vessels of about the size of the channel steamers; extensive improvements are projected at Newhaven, to make the harbor available for vessels of the largest size.
By lighters in harbor, for vessels other than British men-of-war.	At H. B. M. dockyard.	None	As for Southampton.	
By lighters alongside; no interruption.		None	London, Antwerp, Boulogne, Havre, Cherbourg, Portland, Dartmouth, Plymouth.	
No regular facilities.		None	As for Southampton.	
From hulks in harbor; rather slow; no interruption.	British naval coal depot; works under construction; unfinished, 1891.	None	London, Antwerp, Southampton, Boulogne, Havre, Cherbourg, Dartmouth, Plymouth.	
Alongside hulk, or from hulk brought alongside steamer; excellent facilities; no interruption.	Portland, Devonport.	None	Southampton, Portland, Havre, Cherbourg, Brest, Plymouth, Falmouth, Queenstown.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Plymouth, and Devonport, England.	Aug., 1890.	Cardiff.....		Large supply.	\$5.11 to \$5.60, f. o. b.	¼ mile to 1¼ miles.
Falmouth, England.	Sept., 1883.	Cardiff.....	2,000	1,800	\$4.56 to \$4.80, stowed.	
Penzance, England.	1892.		240,000 tons received, 1891.			
St. Mary's Road, Scilly Ids.	Sept., 1883.	Cardiff.....	300	350	\$5.52 to \$5.76, f. o. b.	
Appledore, and Bideford, England.						
Bristol, England.	Nov., 1889.	Cardiff.....	Small supply maintained; brought from Cardiff by steam lighters as required.		\$3.47 to \$3.71, f. o. b.	
Sharpness, and Gloucester, England.	1890.	Bituminous..... (Forest of Dean)	Ample supply.			
Newport, England.	Dec., 1891.	Monmouthshire and South Wales.	Large supply; upwards of 2,800,000 tons exported, 1891.		\$2.98 to \$3.28.	
Cardiff, and Ponarth, Wales.	Jan., 1891.	Glamorganshire: Best Steam....			\$3.65 to \$3.77.	
	June, 1891.	Best Steam....	Large supply; upwards of 11,500,000 tons exported, 1891.		\$3.41 to \$3.53.	
	Dec., 1891.	Best Steam.... Second quality. Patent fuel....			\$3.16 to \$3.28. \$2.98 to \$3.04. \$2.92 to \$2.98.	
Barry, Wales.	Dec., 1891.	Cardiff.....	See Cardiff.		As at Cardiff.	
Swansea, Wales.	Dec., 1891.	Best Steam.....	Large supply; upwards of 1,900,000 tons exported, 1891.		\$3.16 to \$3.28.	
		Second quality.. Anthracite..... (Vale of Neath)			\$2.98 to \$3.04.	
		Patent fuel.....			\$2.92 to \$2.98.	
Llanelly, and Burry Port, Wales.	Sept., 1883.	Merthyr..... Anthracite.....	2,500 2,500		\$2.49. \$2.43.	
	Dec., 1891.	Merthyr.....	209,000 tons exported, 1891.		\$2.98 to \$3.28.	
		Anthracite.....				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
By lighters at anchorage, or in Great Western docks; excellent facilities.	Coaling jetty under construction, 1891, at dockyard, Keybau.	None	Southampton, Portland, <i>Dartmouth</i> , <i>Brest</i> , Falmouth, Queenstown.	
From hulks towed alongside at outer anchorage; 10 to 30 tons per hour; sometimes interrupted by weather in winter.	Devonport.	None	Portland, <i>Dartmouth</i> , <i>Plymouth</i> , <i>Brest</i> , Queenstown, Cardiff.	
	None	None	See Falmouth.	
Alongside coal hulk in deep water; rapid; sometimes interrupted by heavy weather.	None	None	<i>Plymouth</i> , <i>Falmouth</i> , Queenstown, Swansea, Cardiff.	Total receipts during 1891 amounted to 2,700 tons.
	None	None	Milford, <i>Swansea</i> , Cardiff, Bristol.	Both harbors are dry at L. W.; good anchorage in the Pool.
From steam lighter alongside in docks; rapid; no interruption.		Bristol district of Gloucestershire; output, 503,000 tons, 1890.	<i>Newport</i> , Cardiff, Barry, Swansea, Milford.	Bristol, Avonmouth, and Portishead Docks are available for vessels of the largest size.
Excellent facilities for rapid coaling in Sharpness New Docks, entered by lock 320 feet by 60 feet by 24 feet depth on sill.	None	Forest of Dean, W. Gloucestershire, about 900,000 tons yearly output.	As for Bristol.	Ship canal, without locks, from Sharpness to Gloucester, 16 miles, is available for vessels 320 feet long, 33 feet beam, and 13 to 15 feet draught.
At coaling staithe in docks; very rapid; no interruption.		Monmouthshire; 6,895,000 tons output, 1890.	See Cardiff.	Monmouthshire coals are commonly known elsewhere as Welsh or Cardiff, the deposits forming a continuation of the Glamorganshire coal fields.
In docks, available for largest vessels afloat; most improved modern facilities for rapid coaling; no interruption; or by steam lighters in Penarth Roads; rapid; liable to interruption by high winds from Sd. and Ed.		Glamorganshire; 21,426,000 tons output, 1890.	Falmouth, Bristol, <i>Newport</i> , Swansea, Milford, Queenstown, Dublin, Liverpool.	Port of Cardiff gives its name to all coals of the district.
In Barry Docks; accommodation for largest vessels afloat; best facilities; very rapid.		See Cardiff	As for Cardiff.	Sub-port of Cardiff; on Barry Island, distant 20 miles.
In docks at coaling staithe; rapid; no interruption; or by steam lighters alongside at anchorage; high winds from ESE. may interrupt.		As for Cardiff	Falmouth, Cardiff, <i>Llanelli</i> , Milford, Queenstown, Dublin, Liverpool.	
In docks, available for vessels of 1,000 to 3,000 tons; rapid; no interruption.	None	Gwendreath and Trimsaran valleys; anthracite.	Cardiff, <i>Swansea</i> , Milford, Queenstown, Dublin, Liverpool.	Output for Carmarthenshire, 1890, amounted to 762,000 tons.

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Milford Haven, and Pembroke, Wales.	1886.	Welsh anthracite Powell's Duffryn	Large supply. 400; Newton Noyes Deep Water Pier.	400; Large quantities at short notice.	\$4.38, f. o. b.	
Holyhead, Wales.	Nov., 1889.	Cardiff..... } Lancashire..... }	1,000	1,000	\$5.35, f. o. b. \$4.14, f. o. b. 24 cents extra per ton when hulk is brought alongside.	
Liverpool, and Birkenhead, England.	Dec., 1891.	Lancashire.....	Large supply; about 100,000 tons shipped per month.		\$2.43; stowing, per ton, 24c.	
Fleetwood, England.	Dec., 1891.	Lancashire.....	Large supply on hand or available.		As at Liverpool.	
Barrow, England.	1891.		Large supply.			
Whitehaven, Workington, and Maryport, England.	Dec., 1891.	Cumbrian.....	Large supply on hand or available.			
Campbeltown, Scotland.	1891.	Scotch.....	Supply maintained for coasting steamers.			
Ayr, Troon, Irvine, and Ardrossan, Scotland.	Dec., 1891.	Scotch..... (Ayrshire)	Large supply; shipments amount to about 100,000 tons per month.		\$1.95, f. o. b., at coal tips.	
Greenock, and Port Glasgow, Scotland.	Nov., 1889.	Scotch..... (Lanarkshire and Stirlingshire) Cardiff.....		3,000	\$2.80, f. o. b., at chutes; \$3.16, f. o. b., by lighters. \$5.84, f. o. b., at chutes; \$6.20, f. o. b., by lighters.	
Dumbarton, Scotland.	1891.	Scotch.....				
Glasgow, Scotland.	Dec., 1891.	Scotch: Steam..... } Splint..... }	Large supply.		\$2.43 to \$2.55. \$2.31.	
Oban, Scotland.						
Stornoway, Island of Lewis, Hebrides.	Nov., 1889.	Cardiff..... North of Engl'd. Scotch.....			\$6.45, f. o. b. \$4.14, f. o. b. \$3.65, f. o. b.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
In Milford Docks, available for the largest vessels; at Newton Noyes Deep Water Pier; at coal drops, New Milford; or by lighters in Milford Haven; no interruption in any case.	.....	Pembrokeshire; Welsh anthracite.	Cardiff, Swansea, <i>Llanelly</i> , Queenstown, Dublin, Holyhead, Liverpool.	Total output of Pembrokeshire mines, during 1890, amounted to 72,000 tons.
Alongside hulk, or from hulk brought alongside; sometimes interrupted by northerly winds.	None	None.....	Cardiff, Swansea, Milford, Queenstown, <i>Dublin</i> , Liverpool, Belfast.	
In docks at coaling staithes or from flats alongside; rapid; no interruption.	None	Extensive, in Lancashire.	Cardiff, Swansea, Milford, Queenstown, Dublin, Holyhead, <i>Fleetwood</i> , Barrow, Belfast, Glasgow.	
Coal tips in Wyre Dock; rapid; no interruption.	None	Extensive, in Lancashire.	<i>See</i> Liverpool.	
In Barrow Docks, or at anchorage, Piel Roads.	None	None in immediate vicinity.	Liverpool, <i>Fleetwood</i> , Whitehaven, Belfast.	
Coaling staithes in docks; Whitehaven and Maryport docks are available for vessels of considerable size.	None	Coast of Cumberland; Whitehaven mines extend under the sea.	Liverpool, Fleetwood, <i>Barrow</i> , Belfast, Greenock, Glasgow.	Total output of mines of Cumberland, in 1890, amounted to 1,740,000 tons.
At anchorage, Campbelltown Lock; no interruption.	None .....	.....	Belfast, <i>Greenock</i> , Glasgow.	Total receipts of coal, 30,725 tons, 1891.
The best facilities are those afforded by the wet docks at Ayr; rapid; no interruption; extensive harbor improvements at Ardrossan nearly completed.	None	Extensive, in Ayrshire; output, 3,160,000 tons, 1890.	Belfast, Campbelltown, <i>Greenock</i> , Dumbarton, Glasgow.	
At coal chutes; best facilities afforded in James Watt Docks, Greenock, available for largest vessels afloat; by lighters at anchorage, if preferred.	None	Extensive; Renfrewshire, Dumbartonshire, Lanarkshire, and Stirlingshire.	Liverpool, Holyhead, Dublin, Belfast, Ardrossan, <i>Glasgow</i> , Campbelltown, Stornoway.	Coal shipments from Greenock amount to from 6,000 to 8,000 tons per month.
By lighters in river	None	<i>See</i> Greenock...	<i>See</i> Greenock.	Output, 1890, Dumbartonshire, 340,000 tons.
Best facilities at north quay, Queen's Dock (tidal); hydraulic cranes, etc.; rapid; no interruption.	None	<i>See</i> Greenock... Total output of Lanarkshire mines (1890), 13,585,000 tons.	<i>See</i> Greenock.	Exportation of coal from Glasgow amounts to about 50,000 tons per month.
.....	None	None	<i>Campbeltown</i> , Stornoway.	
From hulks in harbor; no interruption.	None	None	<i>Stromness</i> , Campbelltown, Belfast.	Coal receipts, during the year 1891, amounted to 8,700 tons.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Londonderry, Ireland.	1891.	.....	156,000 tons received by sea during year.			
Larne, Ireland.	1891.	.....			
Belfast, Ireland.	Nov., 1889.	Cardiff..... } Scotch..... }	Ample supply.		\$4.14 f. o. b., \$3.41 f. o. b., at wharves, in docks.	
Dublin, and Kingstown, Ireland.	1891.	.....	Ample supply at all times.			
Wexford, Ireland.	1891.	.....	73,000 tons received by sea during year.			
Waterford, Ireland.	Sept., 1883.	Cardiff.....	Ample supply.		\$4.86, stowed.	$\frac{1}{2}$ mile
Queenstown, and Cork, Ireland.	Sept., 1883.	Cardiff.....	3,200	3,200	\$5.35 to \$5.96, stowed.	
Limerick, Ireland.	1891.	.....	111,000 tons received by sea during year.			
Galway, Ireland.	1891.	.....	21,000 tons received by sea during year.			
Sligo, Ireland.	1891.	.....	31,000 tons received by sea during year.			
Reikiavik, Iceland.	1891.	Bituminous.....	Small supply.		Prices moderate.	About $\frac{3}{4}$ mile.
Vadsø, Norway.	1891.	Bituminous.....		4,800 tons, total importation, 1890.		
Vardo, Norway.	1889.	Bituminous.....		10,000 tons imported annually.		
Hammerfest, Norway.	1891.	Bituminous.....		7,400 tons imported, 1890.		About $\frac{3}{4}$ mile.
Tromsø, Norway.	1890.	Bituminous.....		20,000 tons imported annually.		
Bodo, Norway.	1891.	Bituminous..... (Great Britain)		25,000 tons imported, 1890.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
	None	None	<i>Campbeltown, Greenock, Belfast.</i>	
At pier; 18 ft. alongside at L. W.	None	None	<i>Londonderry, Belfast, Greenock.</i>	Port of call, State Line S. S. Co., Glasgow to New York.
Preferably at wharves in docks, for vessels not exceeding 16 ft. draught.	None	None	<i>Greenock, Londonderry, Larne, Barrow, Dublin, Holyhead, Liverpool.</i>	
By lighters in either harbor; at quays, Alexandra Basin; or at wharf, Kingstown; 24 feet alongside at low water.	None	None	<i>Greenock, Belfast, Holyhead, Liverpool, Milford, Cardiff, Queenstown.</i>	
	None	None in immediate vicinity.	<i>Dublin, Waterford.</i>	
Alongside wharf boats; by bags; 100 tons per day; no interruption.	None	Anthracite, about 30 miles distant, near Castlecomer; output small.	<i>Holyhead, Dublin, Milford, Queenstown.</i>	Total coal receipts, by sea, 1891, amounted to 207,000 tons.
At wharves, or from lighters; by baskets in each case; best facilities at Queenstown; no interruption.	At H. B. M. dockyard, Haulbowline; several thousand tons.	Anthracite, 20 to 30 miles to N.W., beyond Mallow; chiefly used for kilns.	<i>Liverpool, Dublin, Waterford, Milford, Swansea, Cardiff, Falmouth, Limerick.</i>	
	None	Deposits to SW., between Tralee and Killarney.	<i>Queenstown, Galway.</i>	
	None	None	<i>Limerick, Sligo.</i>	
	None	None	<i>Galway, Londonderry.</i>	
In bags from coal-shed to lighters, then to ship; very slow; no interruption.	None	None	<i>St. John's, N.F., Lercick, Hammerfest, Trondhjem, Bergen.</i>	Two coal-dealing firms at this port.
By lighters	None	None	<i>Vardo, Hammerfest.</i>	Depth harbor entrance, H. W., 22 ft.; L. W., 16; being deepened, 1891.
	None	None	<i>Vadso, Hammerfest.</i>	
By lighters from coal-sheds; slow; no interruption.	None	None	<i>Vadso, Vardo, Tromso, Trondhjem.</i>	Harbor is usually open throughout the year.
	None	None	<i>Hammerfest, Trondhjem, Bodo.</i>	
	None	None	<i>Tromso, Nasmos, Trondhjem.</i>	

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Nansos, Norway.	July, 1890.	British		1,500 tons imported per year.	\$4.87.	
Trondhjem, Norway.	1891.	Bituminous (not specified)		66,000 tons imported, 1890.		
Christiansund, Norway.	1891.	Bituminous (not specified)		11,000 tons imported, 1890.		
Bergen, Norway.	Jan., 1884.	Welsh	4,000	10,000	\$5.16.	
		English	8,000		\$4.20.	
		Scotch			Stowing, 18c.	
Haugesund, Norway.	1890.	Bituminous (not specified)		12,000 tons imported per year.		
Stavanger, Norway.	Jan., 1884.	English	2,500	2,000	\$4.32, stowed.	Short.....
		Scotch			\$3.84, stowed.	
Egersund, Norway.	1891.	Bituminous (not specified)		5,500 tons imported, 1890.		
Christiansand, Norway.	Sept., 1883.	Welsh	3,700	3,000	\$5.76.	Pile to lighters, 50 to 100 yards.
		Scotch			\$4.80.	
Arendal, Norway.	Dec., 1883.	Welsh	1,400	1,400	\$4.32, at pile;	$\frac{1}{2}$ to $\frac{1}{4}$ mile ..
		English			\$4.86, alongside;	
					\$5.40, stowed.	
Porsgrund, and Skien, Norway.	1891.	Bituminous (not specified)		35,000 tons imported, 1890.		
Laurvig, and Frederiksvaern, Norway.						
Sandefjord, Norway.						
Tonsberg, Norway.	1891.	Bituminous (not specified)		10,000 tons imported per year.		
Horten, Norway.						
Drammen, Norway.	1891.	Bituminous (not specified)		40,000 tons imported, 1890.		
Christiania, Norway.	Dec., 1883.	Welsh	10,000	9,000	\$4.32 stowed.	1 mile.....
		English				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling, rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
	None	None	Tromsø, Bodo, <i>Tromsøhem</i> .	
		None	Bodo, Namsos, <i>Christiansund</i> , Bergen.	Rail connection to city of Christiania, and to Sweden.
	None	None	<i>Tromsøhem</i> , Bergen.	
Rapid; no interruption; harbor open throughout the year.	None	None	Tromsøhem, <i>Christiansund</i> , <i>Haugesund</i> , Stavanger.	Importation of coal, 1890, amounted to 140,000 tons.
	None	None	Bergen, <i>Stavanger</i> , <i>Christiansand</i> .	
Slow; harbor exposed to northerly winds; free from ice throughout winter.	None	None	Bergen, <i>Haugesund</i> , Eggersund, <i>Christiansand</i> .	25,000 tons of coal imported, 1890.
	None	None	Bergen, <i>Stavanger</i> , <i>Christiansand</i> .	Rail connection to Stavanger.
In outer harbor, by lighters; rarely interrupted.		None	Stavanger, Eggersund, <i>Arendal</i> , Christiania, Gothenburg.	
By lighters; 100 tons per day.	None	None	Stavanger, <i>Christiansand</i> , Porsgrund, Christiania, Gothenburg.	14,000 tons of coal imported from Great Britain, 1890.
		None	Christiansand, <i>Arendal</i> , <i>Tonsberg</i> , Moss, Christiania, Gothenburg.	Open all the year; depth at entrance, Porsgrund, 19 feet; Skien, being deepened to 19 feet, 1891; rail connection from Skien to Christiania.
	Norwegian Govt. dockyard at Fredriksvaern.	None	<i>Porsgrund</i> , and as for Porsgrund.	
		None	See Laurvig.	
		None	See Christiania	Not available for vessels exceeding 17 feet draught; harbor closed by ice during five months of the year.
	Norwegian Government dockyard.	None	See Christiania	
	Horten	None	See Christiania	Entrance to harbor deepened to 21 feet, 1890; open all the year.
By lighters; rapid; no interruption.	Horten	None	Christiansand, <i>Arendal</i> , Horten, Drammen, <i>Moss</i> , Gothenburg.	Coal importation, 260,000 tons, 1890.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Moss, Norway.	1891.	Bituminous.		15,000 to 20,000 tons imported annually.		
Frederikstad, Norway.						
Frederikshald, Norway.	1891.	Bituminous.		10,000 tons imported, 1890.		
Frederikshavn, Denmark.	1891.	Bituminous.		A supply maintained for use of steamers calling in.		
Gothenburg, Sweden.	Sept., 1883.	Welsh English	2,000 4,000	5,000	\$3.00 to \$4.50; delivery and stowing, per ton, 42 c.	For vessels of 20 feet draught, 4 miles.
	1887.	Welsh				
	Dec., 1888.	Welsh				
Helsingborg, Sweden.	1891.	Bituminous (chiefly Welsh)		68,000 tons imported, 1890.		
Elsinore, Denmark.	Sept., 1883.	Cardiff West Hartley Scotch	2,000 7,000 6,000	20,000	\$4.50, stowed. \$4.38, stowed. \$4.20, stowed.	At wharf, 60 feet; in roads, $\frac{1}{4}$ mile.
Landskrona, Sweden.	1892.	Bituminous		57,800 tons imported, 1891.		
Copenhagen, Denmark.	Sept., 1883.	Welsh English Scotch	2,800 14,000 2,000	30,000	\$5.36. \$4.56. \$4.28. Delivery and stowing, per ton, 71c. to 98c.	Inner roads, available for vessels of 25 feet draught, $\frac{1}{4}$ to $\frac{1}{2}$ mile; outer roads, 2 to 3 miles.
	Aug., 1885.	Welsh English				
Malmö, Sweden.	Sept., 1883.	English Scotch	12,300 2,500	9,000	\$3.30 to \$4.08; delivery and stowing, per ton, 62 c.	At wharf, 2,000 feet; at anchorage in roads, 2 miles.
Ystad, Sweden.	1891.	Bituminous		28,000 tons imported, 1890.		
Ronne, Id. of Bornholm, Denmark.	Sept., 1883.	West Hartley Yorkshire	1,000 1,000	7,000	\$5.50, f. o. b.	Short

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	Horten	None	<i>See</i> Christiania	
		None	Moss, <i>Frederikshald</i> , Gothenburg.	
		None	<i>See</i> Frederikstad.	
By lighters at anchorage in outer harbor or in roads.	None	None	Gothenburg, and as for Gothenburg.	
At wharf, for vessels not exceeding 16½ ft. draught; or by lighters; baskets or tubs used in either case; slow; rarely interrupted by weather.	None	About 80 miles to southward, near Helsingborg; limited output.	Christiansand; Christiania, Moss, <i>Frederikshald</i> , Helsingborg, Elsinore, Copenhagen.	400,000 tons imported 1890, chiefly Welsh.
	Danish, at Copenhagen.	Hoganas, Stabharp, and Roddinge coalfields; limited output, consumed by state railways, and for local uses.	<i>See</i> Elsinore and Copenhagen.	Extensive harbor improvements in progress, nearly finished, Dec. 1891.
Alongside wharf, available for vessels of 21 feet draught; or by lighters; in barrels, by weight; regulated by customs officials; 6½ barrels to the ton; rapid; ice in January and February.	Danish, at Copenhagen.	Near Helsingborg, Sweden; limited output; not used for marine purposes.	Christiansand, Christiania, Gothenburg, <i>Frederikshavn</i> , Helsingborg, Landskrona, Copenhagen, Malmo, Kiel, Ronne, Stettin, Dantzie.	
	Danish, at Copenhagen.	As for Helsingborg.	<i>See</i> Elsinore and Copenhagen.	
By lighters of about 50 tons capacity, towed off by tugs or launches; liable to interruption by northerly winds in outer roads.	Danish Government dockyard; 2,000 tons Cardiff and Newcastle on hand, Aug., 1885.	None in Denmark	Christiansand, Christiania, Gothenburg, <i>Frederikshavn</i> , Helsingborg, Elsinore, <i>Landskrona</i> , Malmo, Kiel, Ronne, Stettin, Dantzie.	
At wharf available for vessels of 17 ft. draught; or by lighters; rapid in either case; sometimes interrupted in roads by gales.	Danish, at Copenhagen.	To the northward, near Helsingborg; limited output.	<i>See</i> Copenhagen and Elsinore.	Importation of coal, 1891, amounted to 219,000 tons, chiefly from Great Britain.
	None	None in immediate vicinity.	Copenhagen, Malmo, <i>Ronne</i> .	Harbor is usually open throughout winter.
Alongside bulkhead, available for vessels of 17 to 18 feet draught; rapid.	None	Deposits on S. and SW. coasts of island, undeveloped.	Copenhagen, <i>Ystad</i> , Stettin, Dantzie, Karlskrona.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Karlskrona, Sweden.	1891.	Bituminous.....		Receipts by sea per year, 13,000 to 20,000 tons.		
Oscarshamn, Sweden.	1890.	Bituminous.....		8,000 tons imported, 1889.		
Norrköping, Sweden.	Sept., 1883.	English Scotch.....	500 1,500	} 2,000 {	\$4.86, stowed.	About 500 ft.
Slite, Id. of Gothland, Sweden.	1891.	Bituminous..... (not specified)		A supply maintained for use of steamers calling in.		
Stockholm, Sweden.	Aug., 1885.	British.....	15,000	12,000	\$4.87 to \$5.26; delivery and stowing, per ton, 36c.	About 100 ft.
Oregrund, Sweden.	1891.	Bituminous.....		Supply maintained at coaling station.		
Gefle, Sweden.	Sept., 1883.	English..... Welsh.....	3,500 1,500	} 5,000 {	\$4.00, stowed.	According to draught; 13½ feet, ½ mile; 20 feet, 5 miles.
Soderhamn, Sweden.	Sept., 1883.	Welsh.....	500	500	\$4.80, stowed.	2 miles for 19 feet draught; larger vessels, about 8 miles.
Sundsvall, Sweden.	Sept., 1883.	English..... Scotch.....	800 400	} 2,000 {	\$4.59, alongside; \$4.93 to \$5.07, stowed.	Short.....
Abo, Russia.						
Helsingfors, and Sveaborg, Russia.	Nov., 1883.	Welsh..... English.....	2,000 1,500	} 3,000 {	\$6.96, stowed. \$6.24, stowed.	Short.....
Wiborg, Russia.	Sept., 1883.	English.....	400	200	\$5.76, stowed.	
Cronstadt, Russia.	Jan., 1884.	Welsh..... English..... Scotch.....	2,000	} 12,000 {	\$4.40, stowed. \$3.80, stowed. \$3.32, stowed.	½ mile to 6 miles.
	July, 1883.	Newcastle.....			\$4.87, f. o. b.	
St. Petersburg, Russia.	July, 1883.	Newcastle.....		Ample supply.	\$4.87, f. o. b.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters, for vessels exceeding 16 feet draught; outer harbor seldom closed by ice in winter.	Swedish Government dockyard.	None.....	Copenhagen, <i>Ronne</i> , <i>Slite</i> , <i>Norrkoping</i> , <i>Stockholm</i> .	
.....	None.....	None.....	<i>Karlskrona</i> , <i>Norrkoping</i> , <i>Stockholm</i> .	Harbor seldom ice-bound in winter.
By lighters; rapid; or at wharf for vessels of 16 feet draught.	Stockholm..	None.....	<i>Karlskrona</i> , <i>Oscarshamn</i> , <i>Stockholm</i> .	Harbor usually obstructed by ice from December to May.
.....	None.....	None.....	<i>Karlskrona</i> , <i>Libau</i> , <i>Stockholm</i> .	
Alongside wharves, or by lighters; rapid; no interruption; harbor kept open in winter.	Swedish, at dockyard; about 4,000 tons, usual supply.	None.....	<i>Karlskrona</i> , <i>Norrkoping</i> , <i>Oregrund</i> , <i>Gefle</i> , <i>Revel</i> , <i>Helsingfors</i> .	400,000 tons of coal imported, 1889, almost wholly from Great Britain.
At pier, or by lighter from the coaling station.	Stockholm..	None.....	<i>Stockholm</i> , <i>Gefle</i> , <i>Soderhamn</i> , <i>Abo</i> .	
By lighters of 50 to 150 tons capacity; liability to interruption in Nov. and Dec.; vessels exceeding 20 feet draught anchor at Bonan, 8 miles distant.	None in immediate vicinity.	None.....	<i>Stockholm</i> , <i>Oregrund</i> , <i>Soderhamn</i> , <i>Sundsvall</i> , <i>Abo</i> , <i>Helsingfors</i> , <i>Revel</i> .	99,000 tons of coal imported, 1889.
By lighters; no interruption except for vessels anchored in roads at Lilljungfran, 8 miles from Gefle, in case of northeast gales.	None.....	None.....	<i>Stockholm</i> , <i>Oregrund</i> , <i>Gefle</i> , <i>Sundsvall</i> , <i>Abo</i> .	Coal imports during the year 1889 amounted to 20,000 tons.
Alongside wharf, by crane; or from lighters alongside; rapid; sometimes interrupted in autumn.	None.....	None.....	<i>Stockholm</i> , <i>Oregrund</i> , <i>Gefle</i> , <i>Soderhamn</i> , <i>Abo</i> .	Coal imports during the year 1889 amounted to 16,000 tons.
.....	None.....	None.....	<i>Stockholm</i> , <i>Oregrund</i> , <i>Helsingfors</i> .	
By lighters; no interruption during season of navigation.	.....	.....	<i>Stockholm</i> , <i>Abo</i> , <i>Wiborg</i> , <i>Cronstadt</i> , <i>St. Petersburg</i> , <i>Revel</i> .	
By lighters; vessels of 15 ft. draught can not approach nearer than the outer port, Drang-sound, 10 miles distant.	None.....	None.....	<i>Stockholm</i> , <i>Helsingfors</i> , <i>Cronstadt</i> , <i>St. Petersburg</i> , <i>Revel</i> .	Total coal receipts per year by sea, 4,000 to 5,000 tons (1890).
By lighters, in harbor or in roads; slow; port closed in winter; liable to interruption in roads, during September and October, by storms.	Russian Govt. dockyard.	None.....	<i>Stockholm</i> , <i>Helsingfors</i> , <i>Wiborg</i> , <i>St. Petersburg</i> , <i>Revel</i> , <i>Riga</i> .	
By lighters in River Neva; slow; no interruption during season of navigation.	.....	None.....	<i>See Cronstadt</i> .	Port can be reached by the ship canal by vessels of 18 to 20 feet draught.

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Revel, Russia.	1891.	Bituminous		50,000 tons imported per year.		
Riga, Russia.	1884.	English	4,000	6,000	\$4.08 to \$4.32, stowed.	Depots close to wharves.
Libau, Russia.	1891.	Bituminous		60,000 tons imported per year.		
Memel, Germany.	1888.	British		60,000 to 70,000 tons imported per year.		
Pillau, and Königsberg, Germany.	Sept., 1883.	Scotch English	6,000 1,500	10,000	\$3.84. \$4.44. Delivery and stowing, per ton, 48c.	
Dantzic, Germany.	Sept., 1883.	Scotch Silesian	3,000 1,000	3,000	\$3.06. \$4.08. Delivery and stowing, 30c.; at Neufahrwasser, 36c.	In roads, off Neufahrwasser, about 2 miles.
	Nov., 1888.	Welsh North of Engl'd. Silesian				
Swinemunde, and Stettin, Germany.	Nov., 1888.	Welsh English Scotch Silesian		Large supply.	\$4.26, f. o. b. \$3.77, f. o. b. \$3.77, f. o. b. \$3.65, f. o. b.	
	1890.	West Hartlepool Scotch Silesian			\$4.08, ex ship; \$4.70, stowed. \$3.72, ex ship; \$4.08, ex yard. \$4.08, ex barge, Stettin; \$4.57, ex yard, Stettin; \$5.45, ex yard, Swinemunde; see Remarks.	
Lubeck, Germany.	Sept., 1883.	West Hartley German	3,000 Large supply.	3,000	\$4.56, stowed. \$4.32, stowed.	Off Travemunde, about 10 miles from Lubeck.
	Jan., 1890.	West Hartley Scotch		58,260 tons imported, 1889.	\$4.13 to \$4.62, spot. \$3.65 to \$4.01, spot.	
		Westphalian		Comparatively small supply.	Higher than for British.	
Kiel, Germany.	Sept., 1883.	Cardiff Newcastle Scotch	2,000 2,000 3,000	10,000	\$7.20, stowed; \$6.72, stowed; \$5.28, stowed; in roads.	
	1888.	Cardiff			\$5.00, f. o. b., at dock; \$5.00, alongside, in roads; German Govt. contract.	
Flensburg, Germany.						

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters in harbor, available for vessels of 21 feet to 22 feet draught.	.....	None	Cronstadt, <i>Helingsfors</i> , Stockholm, Riga.	Port open from April to December.
By carts at wharves; 15 to 19 feet alongside; or by lighters; slow in either case; closed in winter.	None	None	Revel, <i>Slite</i> , Libau, Karlskrona.	150,000 to 200,000 tons of coal imported per year (1890).
.....	Russian, to be established.	None	Riga, <i>Slite</i> , <i>Memel</i> , <i>Dantzic</i> .	New port works for the Russian navy are under construction, to be finished by 1894.
.....	None	None	<i>Libau</i> , Pillau, <i>Dantzic</i> .	
From collier alongside, at anchorage inside Pillau breakwater; no interruption; vessels of 21 feet draught can lie alongside quays at Pillau; only 12 feet can go to Königsberg.	None	None	Riga, <i>Slite</i> , Libau, <i>Memel</i> , <i>Dantzic</i> , Karlskrona, Ronne, Stettin.	1887.—146,000 tons imported from Great Britain; Silesian coal dearer than British, and in use only by State authorities.
By lighters in roads off Neufahrwasser, for vessels exceeding 20 feet draught; winds from N. or N.E. prevent lighters going out.	.....	None	Riga, <i>Slite</i> , Libau, <i>Memel</i> , <i>Pillau</i> , Stettin, Ronne, Malmo, Copenhagen.	
By lighters; notice necessary; vessels of 17 feet draught can go to Stettin; fairway to be deepened to 21 feet; 20 feet alongside quays at Swinemunde; both harbors kept open by ice-boats throughout winter.	None	None; extensive near Kosel, Silesia, about 320 miles up the River Oder; brought to Stettin by rail and river; transportation facilities to be improved and cheapened.	Libau, <i>Memel</i> , Pillau, <i>Dantzic</i> , Karlskrona, <i>Ronne</i> , Lubeck, Kiel, Malmo, Copenhagen.	Coal receipts, 1890: from Great Britain, 400,000 tons; from Silesia, 240,000 tons; a freight drawback of 73c. per ton is allowed on German coal brought by rail to Stettin or Swinemunde upon shipment for export or in bunkers.
By lighters off Travemunde; liable to interruption by gales; 16½ feet can be taken to Lubeck.	German, at Kiel.	None	<i>Dantzic</i> , Ronne, Stettin, <i>Kiel</i> , Copenhagen.	
By lighters; notice beforehand necessary; 200 to 500 tons per day; navigation may be interrupted by ice during January and February.	German Govt. depot at dockyard.	None	Ronne, Stettin, <i>Lubeck</i> , Copenhagen, Elsinore, Gothenburg.	
.....	German, at Kiel.	None	Lubeck, <i>Kiel</i> , Copenhagen.	

COALING, DOCKING AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Cuxhaven, Germany.	Sept., 1883.	West Hartley ..	400	400	\$6.00, in harbor; \$6.72 to \$6.96, in roads.	
	Jan., 1890.	British .. German ..		5,538 tons received, 1889. 2,912 tons received, 1889.		
Hamburg, Germany.	Sept., 1883.	Carliff ..		Large supply.	\$5.28 to \$5.76, stowed, at city. \$3.84 to \$4.08, stowed, at city. Below city, per ton, extra, \$1.50.	
		Newcastle ..				
		Sunderland .. W. Hartlepool ..	700			
Bremerhaven, and Geestemunde, Germany.	Sept., 1883.	Westphalian ..	2,000	2,000	\$4.05, stowed.	30 to 50 feet .
		English ..	300	300		
Nordenham, Germany.	Sept., 1883.	Westphalian ..	600	1,000	\$3.65 to \$4.15, stowed.	100 to 200 yards.
		English ..	500			
Brake, Germany.	Sept., 1883.	Westphalian ..	400	800	\$3.65 to \$4.10, stowed.	100 to 200 yards.
		Scotch ..	300			
Wilhelmshaven, Germany.	Sept., 1883.	Westphalian ..	1,000	1,000	\$4.06 to \$4.50, in port; \$4.81 to \$5.25, in roads.	
Emden, Germany.	1891.	Westphalian ..				
Helder, and Willemsoord, Holland.						
Amsterdam, Holland.	Sept., 1883.	Newcastle ..	2,500	10,000	\$4.20, stowed. \$3.70, stowed. \$3.40 to \$3.89, stowed.	Coal sheds near S. S. wharves; R. R. runs alongside wharves.
		Yorkshire ..	2,500			
		Westphalian ..	Large supply.			
Rotterdam, Holland.	Oct., 1883.	Westphalian ..	8,000	13,500	\$3.50 to \$4.00. \$4.50 to \$4.80. Delivery and stowing, per ton, 25c.	1 to 1½ miles .
		English ..	7,000			

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
By lighters in roads, except for small vessels; liable to interruption by weather in autumn.	.....	None	Christiansand, <i>Hamburg</i> , Bremerhaven, Amsterdam, Hull, Antwerp, Southampton.	
By lighters from colliers; by baskets; rapid; sometimes interrupted by floating ice in winter.	None	None	Christiansand, <i>Cuxhaven</i> , Bremerhaven, Amsterdam, Hull, Antwerp, Southampton.	The importation of British coal at Hamburg during 1890 amounted to 1,580,000 tons; in addition, the receipts of Westphalian coal amounted to upwards of 800,000 tons.
Alongside wharves in docks, by wheelbarrows; no interruption; railway lines run to wharves.	German at <i>Wilhelms-</i> haven.	None; nearest mines in vicinity of <i>Osnabruck</i> , <i>Hannover</i> , and <i>Ibbenburen</i> , Westphalia, 80 to 100 miles distant by rail.	Christiansand, <i>Hamburg</i> , <i>Cuxhaven</i> , <i>Wilhelmshaven</i> , Amsterdam, Hull, Antwerp, Southampton.	1890.—Total receipts of coal per year at Bremerhaven and Breme amount to about 500,000 tons, of which Germany supplies about four-fifths and Great Britain one-fifth.
At wharves; 23 ft. alongside at L. W.; rapid; liability to obstruction by ice in Dec., Jan., and Feb.	None	None	As for Bremerhaven.	
Alongside wharves, available for vessels of 18 ft. draught; rapid; ice may obstruct during Dec., Jan., and Feb.	None	None	As for Bremerhaven.	
By lighters in roads; liable to interruption by gales or ice in Jan. and Feb.	German Govt depot at dockyard.	None	<i>Hamburg</i> , <i>Bremerhaven</i> , <i>Emden</i> , <i>Amsterdam</i> , <i>Rotterdam</i> .	
.....	Nearest at <i>Wilhelms-</i> haven.	Nearest in vicinity of <i>Osnabruck</i> and <i>Ibbenburen</i> : more extensive in Western Westphalia, between <i>Essen</i> and <i>Dortmund</i> , about 140 miles distant.	<i>Hamburg</i> , <i>Bremerhaven</i> , <i>Wilhelmshaven</i> , <i>Amsterdam</i> , <i>Rotterdam</i> .	
.....	.....	None	<i>Wilhelmshaven</i> , <i>Emden</i> , <i>Amsterdam</i> , <i>Rotterdam</i> .	
Alongside wharves, available for large vessels; by baskets of about 1½ cwt. capacity; or by lighters at anchorage (<i>Ymuiden</i>).	.....	None; nearest in Westphalia, in vicinity of <i>Essen</i> , about 100 miles distant.	<i>Hamburg</i> , <i>Bremerhaven</i> , <i>Emden</i> , <i>Rotterdam</i> , <i>Flushing</i> , <i>Antwerp</i> , <i>Southampton</i> .	The canal from <i>Ymuiden</i> to <i>Amsterdam</i> is 14 miles long and 24 feet deep; largest lock 394 feet long, by 60 feet wide at entrance.
At wharves, or from lighters; in bags; slow; no interruption.	Netherlands Govt. dockyard at <i>Hellevoetsluis</i> .	None; the only mines in Holland are at <i>Kerkrade</i> , in extreme S.E.; yearly output about 50,000 to 60,000 tons.	<i>Hamburg</i> , <i>Bremerhaven</i> , <i>Emden</i> , <i>Amsterdam</i> , <i>Flushing</i> , <i>Antwerp</i> , <i>Southampton</i> .	<i>Rotterdam</i> may be reached from the sea, by the <i>New Waterway</i> , by vessels of 21 feet draught at any time, and by vessels of 24 to 26 feet draught at H. W. (1890).

COALING, DOCKING AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Hellevoetsluis, Holland.						
Flushing, Holland.	Oct., 1883.	Westphalian English	600 900	} 1,000 {	\$3.50 to \$4.00. \$4.50 to \$4.80. Delivery and stowing, per ton, in harbor, 25c.; in roads, 60c.	1 to 1½ miles
Antwerp, Belgium.	Oct., 1888.	Belgian Yorkshire Patent fuel (Belgian) }		} Large supply. {	\$2.49 to \$2.55, stowed. \$2.79, stowed \$2.55 to \$2.79, stowed.	
Ostend, Belgium.	1891.					
Dunkirk, France.	Sept., 1883.	Welsh English French	500 500	} Ample supply. {	\$5.60, stowed. \$4.00, at pile; \$4.40, stowed. \$4.00, at pile; \$4.40, stowed. Lighterage to roads, in winter, per ton, 70c.	
	May, 1891.	British Belgian French		} 225,000 tons im-ported, 1890. 41,375 tons ex-ported, 1890. {	\$3.89 to \$4.38, f. o. b.	
Calais, France.	Sept., 1883.	French English	} 3,000	3,000	\$4.40, stowed. Delivery and stowing, per ton, 40c.	
	1891.	Belgian British French		} 108,000 tons im-ported, 1890. Large supply at all times. {	\$3.89 to \$4.38, f. o. b.	
Boulogne, France.	Sept., 1883.	Welsh English French		} Ample supply. {	\$5.60, stowed. \$4.00, at pile; \$4.40, stowed.	
Dieppe, France.	Sept., 1883.	Welsh English Scotch Patent fuel	16,000 8,000	} } }	\$5.60, stowed.	
	Jan., 1892.			390,000 tons, foreign, im-ported, 1891.		
Fécamp, France.	1890.	Bituminous.....		35,000 tons im-ported per year.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
.....	Netherlands Govt. dock-yard.	None	Amsterdam, <i>Rotterdam</i> , Flushing.	
At wharves in docks, available for vessels of 25 feet draught; or in outer harbor, 22 feet at L. W.; or by lighters in roads; liable to interruption in latter case, October to March.	None	None	Hamburg, Bremerhaven, Amsterdam, Rotterdam, <i>Antwerp</i> , Dunkirk, Calais, Southampton.	
At quays along river Scheldt, or in docks; good facilities for vessels of the largest size; no interruption.	.....	Extensive; near Liege and Verviers; in basin of the Sambre, from Charleroi to Namur; and in vicinity of Mons; all distant about 50 to 60 miles.	Hamburg, Bremerhaven, Amsterdam, Rotterdam, <i>Flushing</i> , Ostend, Dunkirk, Calais, Southampton, Havre.	Total coal production of Belgium, during the year 1890, amounted to 20,565,960 tons.
.....	None	None in immediate vicinity.	<i>Antwerp</i> , <i>Dunkirk</i> , Calais.	Ostend wet docks are available for vessels of 18 feet draught, entering at H. W.
In docks; or in roads, by lighters; ice may interfere in winter.	French Govt. depot, Pas de Calais coal, for the navy.	Extensive, in Department of Nord, at Aniche, Anzin, and Valenciennes, 50 to 60 miles distant; output, 5,000,000 tons, 1890; and in Dept. of Pas de Calais; output, 9,000,000 tons, 1890.	Amsterdam, <i>Antwerp</i> , <i>Calais</i> , Boulogne, Dieppe, Havre, Southampton.	The Freycinet Basin is available for vessels of about 21 feet draught; new lock under construction, 1891, will render it available for largest vessels.
By collier alongside, in harbor or in roads; rapid; sometimes interrupted by weather; new docks, opened June, 1889, are available for the largest vessels.	.....	Extensive, 50 miles distant, in Department of Pas de Calais; output, 9,000,000 tons, 1890; and in Dept. of Nord, at Aniche, Anzin, and Valenciennes, output, 5,000,000 tons, 1890.	Amsterdam, <i>Antwerp</i> , <i>Dunkirk</i> , Dover, Boulogne, Dieppe, Fécamp, Havre, Southampton.	The total coal output for the whole of France, during the year 1890, amounted to 26,327,000 tons, of which the Anzin mines furnished 3,122,000 tons.
By lighters, in inner or outer harbor; or in wet dock, if preferred.	.....	Boulonnais mine near city; output, 4,000 tons, 1891; extensive in Pas de Calais.	<i>Calais</i> , and as for Calais.	Importation of British and Belgian coal (1891) amounted to 146,000 tons.
.....	None	None	<i>Antwerp</i> , <i>Dunkirk</i> , Calais, Boulogne, <i>Newhaven</i> , <i>Fécamp</i> , Havre, Southampton.	1891.—There is a patent-fuel factory at Dieppe with a capacity of 250 tons per day; also a factory of the same kind at Arques, 4 miles distant; Welsh coal is used exclusively.
.....	None	None	Dieppe, <i>Havre</i> , Southampton.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Havre, France.	1891.	Bituminous (various kinds)	Large supply at all times; 594,000 tons imported, 1890.			
Rouen, France.	Oct., 1888.	Cardiff. North of Engl'd Scotch French Briquottes d'Anzin.	Large supply.		\$4.50. \$4.26. \$4.14. \$4.14.	
Honfleur, France.	Sept., 1883.	Scotch Newcastle Cardiff.	2,000		\$5.40 to \$5.60; stowing, per ton, 40 c.	In harbor, 100 yards; in roads at mouth of river, 10 miles.
	1891.			73,800 tons imported, 1890.		
Trouville, France.	1891.	British Patent fuel		85,000 tons imported, 1890.		
Caen, France.	1891.			250,000 to 270,000 tons imported per year.		
Cherbourg, France.	July, 1885.	Welsh French	Moderate supply, exclusive of that owned by French Govt.		About \$6.00.	
St. Peter Port, Guernsey, Channel Ids.	Oct., 1883.	Welsh English	2,500	28,000 tons received per year.	\$5.28 to \$6.00, f. o. b.	300 yards.
St. Helier, Jersey, Channel Ids.	Oct., 1883.	Cardiff.	500	2,000	\$5.28; stowing, per ton, 28c. to 40c.	Short hauling distance.
Granville, France.	1891.					
St. Malo, and St. Servan, France.	Sept., 1883.	Cardiff. Newcastle	40,000	30,000	\$4.00 to \$6.00; stowing, per ton, 29c.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
		None	Antwerp, Boulogne, Dieppe, <i>Honfleur</i> , Trouville, Cherbourg, Southampton.	
Alongside quays, from railway cars brought abreast ship; no interruption.	None	None	Boulogne, Dieppe, Havre, <i>Honfleur</i> , Trouville, Cherbourg, Southampton,	Importation of coal at Rouen (1890) amounted to 518,800 tons.
In wet docks, at wharves, or by lighters; slow; no interruption; large vessels, in roads, 10 miles distant, by lighters; difficult and expensive.	French, at Tancarville, for torpedo-boats.	None	Boulogne, Dieppe, <i>Havre</i> , Trouville, Caen, Cherbourg, Southampton.	A great part of the coal imported at this port is for the use of the Western Railway of France.
		None	Boulogne, Dieppe, <i>Havre</i> , Honfleur, Caen, Cherbourg, Southampton.	A considerable proportion of the total amount of coal imported is for the manufacture of patent fuel. Extensive harbor improvements in progress.
		None	Boulogne, Dieppe, Havre, <i>Trouville</i> , Cherbourg, Southampton.	Available as a coaling port for vessels not exceeding 17 feet draught. Patent fuel extensively manufactured.
By lighters in outer harbor; or in Bassin du Commerce; French naval vessels coal at dockyard.	French Govt. depot at dockyard; 24,000 tons on hand. Jan., 1891.	None	Boulogne, Havre, Caen, Southampton, Portland, <i>Guernsey</i> , Brest.	Receipts of foreign coal amount to about 40,000 tons per year.
At pier, for vessels of light draught; 13 feet alongside at L. W.; coal carried in bags on men's backs; slow; no interruption; large vessels, by lighters.	None	None	Portland, Cherbourg, <i>Jersey</i> , Granville, St. Malo, Brest.	
By lighters, or at wharf; 14 feet alongside at L. W.; slow, in either case; no interruption.	None	None	Portland, Cherbourg, <i>Guernsey</i> , Granville, St. Malo, Brest.	
At wharves in wet docks, for vessels of moderate size; there are coaling staithes in the harbor, but it is dry alongside at L. W.	None		Portland, Cherbourg, <i>Guernsey</i> , Jersey, <i>St. Malo</i> , Brest.	Not recommended as a coaling port; the approaches are very dangerous at L. W.
Alongside quays in wet docks; rapid; no interruption.	For torpedo-boats, at Solidor Arsenal (St. Servan), and at mouth of Trieux River near Lézardrieux, 45 miles W.	None	Plymouth, Dartmouth, Portland, Cherbourg, <i>Guernsey</i> , Jersey, <i>Granville</i> , Brest.	Importation of coal amounts to about 180,000 tons per year, chiefly from Great Britain (1890).

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Brest, France.	Jan., 1886.	Welsh English French	1,000 (Exclusive of Govt. supply.)	1,000	{ \$6.50, f. o. b.	About $\frac{1}{2}$ mile.
L'Orient, France.	Jan., 1891.	Bituminous..... (not specified)		14,000 tons imported, 1890.		
St. Nazaire, France.	Dec., 1883.	Cardiff Patent fuel..... (French)	2,500	2,500 500	\$5.00 to \$5.20.	Coal piles alongside quay.
Nantes, France.	1888.	Bituminous..... (not specified)		Ample supply at all times.		
La Rochelle, France.	Oct., 1883.	Welsh English French	2,500 2,500 2,500	3,000	{ \$4.80 to \$5.00, on wharf; stowing, per ton, 30c. \$3.40. About \$3.50.	About 35 feet.
	Mar., 1889.	Welsh French		Coal receipts by sea, 150,000 tons per year.	\$3.40. About \$3.50.	
	Mar., 1890.	Welsh French			\$5.35. About \$3.60.	
Rochefort, France.	Jan., 1891.					
Bordeaux, and Pauillac, France.	Nov., 1888.	Cardiff North of Engl'd }		Large supply.	{ \$4.87 to \$5.36. \$4.99.	
Bayonne, France.	1890.	British		75,000 tons imported per year.		
Passages, and San Sebastian, Spain.	Feb., 1891.	Cardiff..... Newcastle				
Bilbao, Spain.	Jan., 1886.	Welsh English	750	750	{ \$7.00, f. o. b.; stowing extra.	About $\frac{1}{2}$ mile.
	1890.	Asturian.....		60,000 tons received from Gijon during year.	\$4.58, f. o. b., screened; \$3.80, f. o. b., ordinary.	
Santander, Spain.	Aug., 1884.	None	None			
Gijon, Spain.	Dec., 1890.	Asturian.....		Large supply.	\$3.70, f. o. b., screened; under coal tips; light- erage extra.	

together with the usual supply on hand, coal, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters and baskets; rapid; no interruption.	French Govt. depot at dock yard; 27,000 tons on hand. Jan., 1891.	None.....	Southampton, Cherbourg, Guernsey, Plymouth, <i>L'Orient</i> , St. Nazaire, Bordeaux, Corunna.	1891.—There are coaling staithes in the harbor capable of shipping 45 tons of coal per hour. Coal importation amounts to 38,000 tons per year.
	French Govt. depot at dock yard; 16,000 tons.	None.....	Brest, <i>St. Nazaire</i> , La Rochelle, Bordeaux.	
Alongside quay in wet docks, available for large vessels entering at H. W.; by baskets; no interruption.	None.....	None.....	Brest, <i>L'Orient</i> , <i>Nantes</i> , La Rochelle, Bordeaux, Corunna.	780,000 tons of coal imported at St. Nazaire during the year 1890, a great part of the amount being destined for Nantes.
		Limited; Depts. of Loire-Inférieure and Maine-et-Loire; output, 45,000 tons, 1887.	<i>St. Nazaire</i> , and as for <i>St. Nazaire</i> .	Not available for vessels exceeding 17 feet draught; river sometimes blocked by ice in winter.
Alongside wharf in wet docks; rapid; or from coal vessel alongside in roadstead; no interruption in either case.	None; nearest at Rochefort.	None.....	Brest, <i>L'Orient</i> , <i>St. Nazaire</i> , <i>Rochefort</i> , Bordeaux, Bilbao, Gijon, Ferrol, Corunna.	1891.—The new wet docks of La Pallice will accommodate vessels of the largest size entering during six hours of each tide.
	French Govt. depot at dock yard; 12,000 tons.	None.....	Brest, <i>St. Nazaire</i> , <i>La Rochelle</i> , Bordeaux, Corunna.	Importation of coal and patent fuel at Rochefort and Tonuay-Charente, during 1861, amounted to 213,000 tons.
		None.....	Brest, <i>L'Orient</i> , <i>St. Nazaire</i> , <i>La Rochelle</i> , Bayonne, Bilbao, Gijon, Ferrol, Corunna.	Importation of British coal, during 1890, amounted to 425,000 tons.
		None.....	La Rochelle, Bordeaux, <i>Passages</i> , Bilbao.	Port available for vessels of 18 feet draught crossing the bar of the Adour at H. W.
	None in immediate vicinity.	None.....	Bordeaux, <i>Bayonne</i> , Bilbao.	
By lighters and baskets; slow; no interruption.		None.....	La Rochelle, Bordeaux, Bayonne, <i>Passages</i> , Gijon, Ferrol, Corunna.	Importation of coal from Great Britain, during 1890, amounted to 318,000 tons.
	None.....	None.....	<i>Bilbao</i> , Gijon.	80,000 tons coal and coke imported, 1891.
By lighters; vessels of 17 ft. draught can go under coal tips, but only at H. W.; facilities to be improved.		Extensive in Asturias; output (1890) 850,000 tons; increasing every year.	La Rochelle, Bordeaux, <i>Bilbao</i> , Ferrol, Corunna.	Asturian coal is reported to contain considerable sulphur.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.			
Ferrol, Spain.	Dec., 1885.	Welsh	2,000	} 4,000 {	\$6.25.	600 to 1,000 feet.			
		English	1,000						
	1888.	Asturian		9,000 tons recd. during year					
		British		2,500 tons recd. during year.					
		Belgian		1,000 tons recd. during year.					
Corunna, Spain.	Aug., 1884.	Welsh	3,000	} 4,500 {	\$6.33.	100 to 120 yards.			
		English	2,000						
		Asturian	500					\$6.00.	
	1887.		Total coal receipts, 13,000 tons.						
1891.			Total coal receipts, 8,000 tons.						
Vigo, Spain.	Oct., 1883.	Welsh	3,000	} 2,500 {	\$7.00, stowed.	500 yards			
		English	1,000						
		Asturian	500		\$6.00.				
	Jan., 1892.			14,000 tons recd.. 1891.					
Oporto, Portugal.	Oct., 1883.		4,000						
Lisbon, Portugal.	Dec., 1889.	Cardiff	10,000	} 20,000 {	\$5.60, alongside.	About 1 mile.			
		Newcastle	5,000						
		Scotch	2,000					\$5.23, alongside.	
					\$4.87, alongside.				
					Stowing, per ton, extra, 37c.				
Setubal, Portugal.	Oct., 1883.		Small supply.						
Huelva, Spain.	Sept., 1883.	Cardiff			\$6.27 to \$6.51.	Short			
San Lucar, Spain.	Sept., 1883.	None	None	None					
Seville, Spain.	Sept., 1883.	Welsh	} 2,500	2,000 {	\$7.42, stowed.	Foreign coal on wharves; Spanish brought to wharves by rail.			
		Scotch							\$6.61, stowed.
		Spanish					Large supply available at short notice.		\$6.37, stowed.
Cadiz, Spain.	Mar., 1886.	Welsh	} 7,000	6,500 {	\$6.56.	Coal piles on wharves.			
		English							
		Spanish					Small supply.		
Algeciras, Spain.	Sept., 1883.	None	None	None					

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling: rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
By lighters; 200 tons per day; no interruption.	Spanish, at dockyard.	None	Brest, La Rochelle, Bordeaux, Bilbao, Gijon, <i>Corunna</i> , Vigo, Lisbon, Cadiz, Gibraltar.	
By large lighters; rapid; no interruption.	British contract; 1,000 tons kept on hand; Spanish Govt. depot at Ferrol.	None	Brest, St. Nazaire, La Rochelle, Bordeaux, Bilbao, Gijon, <i>Ferrol</i> , Vigo, Lisbon, Cadiz, Gibraltar.	
By large lighters; rapid; no interruption.	None	None	Brest, Ferrol, Corunna, <i>Oporto</i> , Lisbon, Cadiz, Gibraltar.	
		Anthracite, near Coimbra, about 60 miles distant; small output.	Vigo, and as for Vigo.	Coal importation, 1890, amounted to 95,800 tons.
By lighters and baskets; 25 to 30 tons per hour; rarely interrupted.		None	Ferrol, Corunna, Vigo, <i>Oporto</i> , Huelva, Cadiz, Gibraltar.	Total importation of coal into Portugal during 1888 amounted to 482,000 tons, of which 480,000 came from Great Britain.
		None	<i>Oporto</i> , <i>Lisbon</i> , Cadiz.	Not recommended as a coaling port.
Alongside wharves, available for all vessels able to cross bar; from tips and chutes; rapid; no interruption; by lighters, if preferred.	Spanish, at Cadiz; British, at Gibraltar.	None	<i>Oporto</i> , Lisbon, Cadiz, Gibraltar, Malaga, Oran.	1890.—Importation of coal and coke during the year amounted to 87,700 tons.
	See Huelva.	None	Huelva, Seville, Cadiz.	930 tons Newcastle imported, 1891, for gas-works.
At wharf; 12 feet alongside at L. W., 16 feet at H. W.; no interruption except in case of extraordinary freshets.	Spanish, at Cadiz; British, at Gibraltar.	At Villanueva del Rio; inferior quality; limited output, about 47,000 tons per year.	Lisbon, Huelva, Cadiz, Gibraltar, Malaga, Oran.	1890.—Importation of coal during the year amounted to 55,000 tons.
Alongside wharf, or by lighters of 50 tons capacity; 15 to 20 tons per hour; sometimes interrupted by weather in February and March.	Spanish, at dockyard (Caracas); 2,000 tons on hand, Welsh and Spanish.	None	Lisbon, Huelva, Seville, <i>Gibraltar</i> , Malaga, Almeria, Oran, Cartagena.	Importation of coal from Great Britain, during 1890, amounted to 52,576 tons.
Excellent facilities at Gibraltar, across the bay.	British, at Gibraltar.	None	See Gibraltar.	Rail connection to interior has been established since date of this report.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports.

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Gibraltar.	Jan., 1890.	Cardiff.....	20,000	20,000	\$5.35, f. o. b., from collier alongside; \$5.84, f. o. b., alongside coal bulk; \$6.08, f. o. b., by lighters.	
		Newcastle.....	2,000			
	1891.	Cardiff (Cory's Merthyr)		\$5.60, f. o. b.; Austrian Govt. contract for the year.		
	1892.	Cardiff.....		\$5.11, stowed, alongside coal bulk; \$5.35, alongside by lighters; \$5.47, stowed; German Govt. contract to April, 1893.		
Malaga, Spain.	Sept., 1887.	Cardiff.....	1,000	4,000	\$4.36, from collier; \$5.82, from shore.	About 1 mile.
		Newcastle.....	3,000			
Almeria, Spain.	Jan., 1885.	Cardiff.....	500	400	\$6.25, stowed.	100 yards
	Sept., 1887.	Cardiff..... } Newcastle..... }	200	200	\$4.87.	
Cartagena, Spain.	Aug., 1885.	Welsh..... } English..... }	Ample supply.		\$6.00 to \$6.50, f. o. b.	About 1 mile
Torreveja, Spain.	Oct., 1883.	None.....	None	None		
Alicante, Spain.	1891.	British.....		Good supply.		
Denia, Spain.	1885.	None.....	None	None		
Valencia, Spain.	Sept., 1887.	Welsh.....	1,000	2,500	\$6.72, stowed. \$6.48, stowed. \$5.76, stowed.	200 to 800 yards.
		English.....	200			
		Patent fuel.....	1,000			
Tarragona, Spain.	Oct., 1883.	Welsh.....	500	1,000	\$7.00 to \$9.00, stowed.	About 1 mile.
		Scotch.....	500			

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling, rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
From steam collier alongside, when practicable; or alongside coal hulk, by baskets of 1 cwt. capacity; or from lighters alongside, by baskets; 30 to 50 tons per hour; liable to interruption by E'y or SW. gales.	British, at New Mole; about 6,000 tons usually kept on hand.	None	Ferrol, Corunna, Lisbon, Vigo, Cadiz, Fayal, Madeira, Teneriffe, <i>Malaga</i> , Almeria, Cartagena, Oran, Algiers, Cagliari, Malta.	The coaling business of Gibraltar amounts to upwards of 1,000 tons per day; 472,000 tons were handled during the year 1889; there are 27 coal hulks in the harbor.
From collier alongside, or from lighters of 30 tons capacity, by baskets; liability to interruption by SE. winds for vessels lying outside harbor.	British, at Gibraltar.	None	Lisbon, Cadiz, <i>Gibraltar</i> , Almeria, Beni Saf, Oran, Cartagena, Algiers.	Coal importation per annum amounts to from 30,000 to 50,000 tons, all from Great Britain.
By lighters of about 20 tons capacity; 15 tons per hour; no interruption; extensive harbor improvements in progress, 1890.	British, at Gibraltar; Spanish, at Cartagena.	None	Lisbon, Cadiz, Gibraltar, <i>Malaga</i> , Beni Saf, Oran, Cartagena, Algiers.	
By lighters; rapid; no interruption; harbor being dredged to a minimum depth of 27 ft., 1891.	Spanish, at dockyard.	None	Gibraltar, Malaga, Almeria, Oran, Algiers, <i>Alicante</i> , Valencia, Barcelona.	Importation of coal, 1890, amounted to 55,700 tons.
	Spanish, at Cartagena.	None	Cartagena, <i>Alicante</i> , Valencia.	
By lighters	None	None	Algiers, <i>Cartagena</i> , Valencia.	Importation of coal, 1890, amounted to 21,000 tons.
	None	None	Alicante, <i>Valencia</i> , Palma.	
By baskets from large lighters of 40 to 50 tons capacity; slow; no interruption.	None	None	Algiers, Cartagena, <i>Alicante</i> , Palma, Port Mahon, Tarragona, Barcelona.	Total importation, 1891: steam coal, 21,000 tons; gas coal, 24,000 tons; patent fuel, chiefly for railway use, 14,400 tons.
By lighters and baskets; about 100 tons per day; liable to interruption and delays in winter.	None	None	Valencia, Palma, Port Mahon, <i>Barcelona</i> .	1890.—Coal importation amounts to 30,000 to 35,000 tons per year.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost per ton.	Distance from coal pile to ship.	
Barcelona, Spain.	Oct., 1883.	Welsh	8,000	} 25,000	\$7.20.	About $\frac{1}{2}$ mile.	
		English	6,000		\$6.72.		
		Scotch	1,000		\$6.24.		
				Stowing, per ton, 48 c.			
	May, 1888.	Welsh			\$6.38.		
1890.	Welsh		} See Remarks.	\$6.08 to \$6.57.			
	English						
	Australian						
	Spanish						
Palma, Majorca, Balearic Ids.	Oct., 1883.	Welsh	1,500	1,500	\$9.50, f. o. b. Stowing, per ton, 12 c.	$\frac{1}{2}$ mile.....	
Port Mahon, Minorca, Balearic Ids.	Nov., 1884.	Welsh	ample supply.		\$8.50, f. o. b.	$\frac{1}{2}$ mile.....	
Port Vendres, France.	-----						
Cette, France.	1884.	English..... French..... Patent fuel.....	3,000 1,000	200,000 tons received per year.	\$6.40. \$5.80. \$6.20.	-----	
Marseilles, France.	Jan., 1888.	Welsh	} Large supply.		\$4.87, f. o. b.	Alongside coaling wharf, a few yards only; at moorings inside the mole, Bassin National, about $\frac{1}{2}$ mile.	
		English			\$3.40 to \$4.40.		
		French					
	Patent fuel						
	1890.	Welsh			\$6.08, stowed; average price during year.		
1891.	Welsh (Cory's Menthyr)			\$5.84, f. o. b.; Austrian Govt. contract for the year.			
Jan., 1892.	Welsh			\$5.72, f. o. b.			
La Ciotat, France.	1889.	-----					
Toulon, and La Seyne, France.	Jan., 1891.	Large supply.					

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in <i>italics</i> .)	Remarks.
By lighters; 500 to 600 tons per day in summer, 300 to 400 in winter; sometimes interrupted by boisterous weather in February and March.	-----	At San Juan de las Abadesas, about 60 miles distant; output about 100 tons per day; coal of inferior quality.	Algiers, Cartagena, Alicante, Valencia, Palma, Port Mahon, <i>Tarragona</i> , Cette, Marseilles, Toulon, Villefranche, Genoa, Spezia, Leghorn, Cagliari.	Importation of coal by sea, during 1890, was as follows: Welsh, 213,000 tons; Newcastle, 125,000; South Yorkshire, 20,000; Australian, 3,245; Spanish, from Gijon, 700. Receipts of the last named in 1889 amounted to 12,000 tons. In addition, coal is received by rail from San Juan de las Abadesas and from southern France.
By lighters; no interruption; merchant steamers coal at wharf.	None -----	None -----	Algiers, Cartagena, Valencia, <i>Port Mahon</i> , Barcelona.	
By lighters; 200 tons per day; no interruption.	None -----	None -----	Algiers, <i>Palma</i> , Barcelona, Marseilles, Villefranche, Cagliari, Palermo.	
-----	None -----	Nearest in Department of Hérault.	Barcelona, <i>Cette</i> , Marseilles.	Vessels of 22 ft. draught can go alongside quays in wet docks.
By lighters, from storehouses or railway cars; liability to interruption in case of bad weather, through lighters being prevented from coming alongside.	None -----	In Hérault, mines of Graissac, about 80 miles distant by rail; in Gard, mines of Bessèges, Portes, and La Grande Combe, near Alais, about 100 miles by rail; in Tarn, mines of Carmaux, about 200 miles by rail; also extensive in Aveyron.	Barcelona, <i>Marseilles</i> , Toulon.	Total coal output during the year 1887 for the Departments of Gard, Hérault, Tarn and Aveyron, amounted, respectively, to 1,800,000 tons, 208,000 tons, 314,000 tons, and 759,000 tons. Large quantities can be brought to Cette from mines within 12 to 24 hours, but the railway companies are allowed 6 days delay.
At coaling wharf, Bassin National, by baskets; or by large lighters at moorings inside mole; no interruption in either case.	French, at torpedo depot, for torpedo-boats only; also at torpedo depot at La Clotat, 20 miles distant; French, large, at dockyard, Toulon, 40 miles distant.	In Department of Gard, as for Cette; in Departments of Loire and Haute Loire (St. Etienne and district, about 180 miles distant by rail), very extensive, 3,148,000 tons output, 1887; lignitic, near Fuveau and Trets, about 15 miles by rail.	Algiers, Cartagena, Valencia, Palma, Port Mahon, Barcelona, Cette, <i>Toulon</i> , Villefranche, Genoa, Spezia, Leghorn, Naples, Messina, Palermo, Cagliari, Malta.	Receipts of French coal at Marseilles for four years ending January, 1889, averaged 450,000 tons per year; importation of coal from Great Britain amounts to 300,000 to 450,000 tons per year; coal freights from Wales range from \$1.64 to \$2.32 per ton.
-----	French, for torpedo-boats.	See Marseilles ..	As for Marseilles.	
-----	French, at dockyard: 50,000 tons on hand.	None: see Marseilles.	<i>Marseilles</i> , and as for Marseilles.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Nice, and Villefranche, France.	Jan., 1886.	Cardiff.....	5,000 at Nice; 1,500 at Villefranche.		\$7.50, f. o. b.	
	Mar., 1889.	Cardiff.....			\$6.89, f. o. b.	
Ajaccio, Corsica.	May, 1888.	Cardiff.....	150	150		
Bastia, Corsica.						
Savona, Italy.	July, 1886.	Welsh English.....	1,000	} Ample supply. {	\$5.25, stowed.	Very short; coal piles on wharf.
Genoa, Italy.	June, 1891.	Cardiff.....		749,000 tons imported, 1890.	\$5.80 to \$6.00.	
		Newcastle.....		574,700 tons imported, 1890.	\$4.75 to \$5.00.	
		Scotch Lancashire Hartlepool.....		} { 170,000 tons imported, 1890.		
	1892.	Cardiff.....			\$4.99, alongside; \$5.11, stowed; German Govt. contract to April, 1893.	
Spezia, Italy.	Mar., 1888.	Cardiff.....	Large supply; chiefly property of Italian Government.		\$5.80. (From dockyard, by courtesy.)	About $\frac{1}{2}$ mile.
Leghorn, Italy.	June, 1889.	Cardiff.....		} { 5,000	\$6.08.	About 1,000 feet.
		Newcastle.....				
		Scotch.....				
Civita Vecchia, Italy.	Sept., 1883.	Welsh.....	2,500	1,500	\$7.72.	$\frac{1}{2}$ mile.....
		English.....	3,000	1,000	\$6.76. Delivery and stowing, per ton, 48 c.	
Maddalena, Sardinia.	Jan., 1890.		40,000 (Owned by Italian Govt.)	40,000		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
Men-of-war and all deep-draught vessels coal at Villefranche; by large lighters of 80 to 120 tons capacity, from Nice or from Villefranche; rarely interrupted by weather.	French, at Villefranche, by contract; 450 tons, minimum allowable supply on hand.	None	Barcelona, Marseilles, Toulon, <i>Savona</i> , Genoa, Spezia, Leghorn, Ajaccio.	Importation of coal at Nice, 1890, amounted to 36,700 tons, chiefly for use on shore.
By lighters, towed alongside by steam launches; liable to interruption in case of wind from NE.	French, small, for supply of torpedo-boats.	None	Marseilles, Toulon, Villefranche, <i>Bastia</i> , Naples.	Coal in excess of supply on hand can be obtained from Marseilles with slight delay.
	French, for torpedo-boats.	None	Villefranche, Genoa, Spezia, <i>Leghorn</i> .	
Alongside wharf, by baskets; 300 to 400 tons per day; no interruption.	Italian, small, for torpedo-boats (secondary station); also at Porto Maurizio (1887).	None	Barcelona, Marseilles, Toulon, Villefranche, <i>Genoa</i> , Spezia, Leghorn, Civita Vecchia, Naples.	Importation of coal from Great Britain, during 1890, amounted to 438,700 tons.
By large lighters from coal piles on wharves, or from colliers; 350 to 400 tons per day; no interruption.	Italian, small, for torpedo-boats; Italian, large, at Spezia.	None	Barcelona, Marseilles, Toulon, Ajaccio, Villefranche, <i>Savona</i> , Spezia, Leghorn, Civita Vecchia, Naples, Messina, Palermo, Cagliari, Malta.	Coal freights per ton averaged, during the year 1890, \$2.09 from Cardiff, and \$1.83 from Newcastle; these rates were lower than during most years.
By lighters at anchorage; slow; seldom interrupted; Italian naval vessels go to coal wharves at dockyard.	Italian, large, at dockyard.	Lignite, of inferior quality, mined about 30 miles distant.	Marseilles, Toulon, Villefranche, <i>Genoa</i> , Leghorn, Naples.	Prices at Spezia, for coal from private dealers, are considerably in excess of Genoa prices.
By lighters; 25 to 30 tons per hour; no interruption in inner harbor; seldom interrupted at outer mole.	Italian, for supply of torpedo-boats; also (secondary station) at Porto Ferrario, Elba.	None	Marseilles, Toulon, Villefranche, Genoa, <i>Spezia</i> , Civita Vecchia, Naples, Messina.	Coal imports per year amount to 225,000 tons; freights per ton from Great Britain range from \$2.31 to \$3.10.
By lighters, at moorings inside breakwater; 150 tons per day; sometimes, but rarely, interrupted in winter.	Italian, at arsenal; about 500 tons kept on hand; secondary station at San Stefano, 1889.	None	Marseilles, Toulon, Villefranche, Genoa, Spezia, <i>Leghorn</i> , Maddalena, Cagliari, Naples.	
	Italian; large supply maintained; also, smaller, at Porto Torres.	None	Villefranche, Genoa, Leghorn, <i>Ajaccio</i> , Civita Vecchia, Cagliari, Naples.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Cagliari, Sardinia.	1884.	Cardiff.....	1,200 Excluding	1,200 Govt. supply.	\$8.15. Delivery, per ton, 50 c.	About 1 mile.
Naples, Italy.	Mar., 1886.	Welsh } English }	} Large supply. }		\$5.11, f. o. b.	300 to 500 feet.
	Mar., 1889.	Welsh }			\$6.51, f. o. b.	
	1892.	Welsh }			\$5.23, alongside; \$5.35, stowed; German Govt. contract, to April, 1893.	
Castellamare, Italy.	Jan., 1885.	Welsh }	100	100	\$6.00, stowed.	
Salerno, Italy.	1887.	British }				
Messina, Sicily.	Apr. 1890.	Welsh }	10,000 Includ- ing Govt. supply.	10,000 Excluding Govt. supply.	\$5.84 to \$6.81.	200 to 400 yards.
Milazzo, Sicily.	1891.	Welsh }	A supply maintained.			
Palermo, Sicily.	Nov., 1886.	Welsh }	} 5,000 }		\$5.98.	10 yards to 1 mile.
		English }			\$5.50.	
Marsala, Sicily.	Oct., 1883.	Welsh }	} 100 }	100 }	\$7.00.	1 mile.
		English }			Delivery, per ton, 40 c.	
Girgenti, Sicily.	Dec., 1886.	Welsh }	Ample supply.		\$6.75, f. o. b.	Inside break- water, about $\frac{1}{2}$ mile; out- er anchor- age, 3 to 4 miles.
Licata, Sicily.	Oct., 1883.	Welsh }	} 700 }	} 2,000 }	\$6.00.	250 yards to 1 mile.
		English }			Delivery and stowing, per ton, 72 c.	
Valetta, Malta.	Apr., 1890.	Cardiff.....	25,000	25,000	\$6.08, f. o. b.	Greatest, $\frac{1}{2}$ mile.
		Newcastle	15,000	15,000	\$5.84, f. o. b.	
	1891.	Cardiff (Cory's Merthyr)	Excluding Govt. supply.		\$5.60, f. o. b.; Austrian Govt. contract, for the year.	
1892.	Cardiff.....			\$4.87, alongside; \$4.99, stowed; German Govt. contract to April, 1893.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters of 40 tons capacity towed alongside by tugs; sometimes, but rarely, interrupted in winter.	Italian; 2,000 tons Cardiff on hand.	4 mines on island; lignite and anthracite of poor quality; total output, 15,700 tons, 1890.	Barcelona, Port Mahon, Algiers, <i>Tunis</i> , Naples, Palermo, Malta.	Coal importation, during 1891, amounted to 36,000 tons, of which 35,000 came from Great Britain and 1,000 from France.
By lighters; slow; no interruption.	Italian; also at Cape Miseno (for torpedo-boats), and at Gaeta (secondary station).	None	Barcelona, Marselles, Villefranche, Genoa, Leghorn, CivitaVecchia, <i>Salerno</i> , Cagliari, Palermo, Messina, Malta.	
By lighters at moorings off mole head; slow.	See Naples	None	As for Naples.	75,000 tons imported, 1890.
	Italian, for torpedo-boats; secondary station.	None	Leghorn, CivitaVecchia, <i>Naples</i> , Messina, Palermo.	Harbor is available only for vessels not exceeding 19 feet draught.
By baskets from lighters alongside; very rapid; merchant steamers usually go alongside coal wharf.	Italian, near dry dock; 7,000 tons Cardiff on hand.		Genoa, Leghorn, Naples, Cagliari, Palermo, <i>Catania</i> , Malta, Alexandria.	Importation of coal from Great Britain, during the year 1890, amounted to 80,000 tons.
Good facilities	Italian, for torpedo-boats.		Naples, <i>Messina</i> , Palermo.	Harbor is available for vessels of 20 feet draught.
By lighters; 300 tons per day; sometimes interrupted in winter by sea; no coaling at night.	Italian; 1,000 tons; secondary station at Trapani.	None	Naples, Messina, <i>Marsala</i> , Cagliari, Port Mahon.	Coal importation, during the year 1890, amounted to 120,000 tons.
By lighters, at anchorage outside of harbor, for vessels exceeding 15 ft. draught; liable to interruption, October to May.	Italian, for torpedo-boats; secondary station.	None	Palermo, Cagliari, Tunis, <i>Girgenti</i> , Malta.	Importation of coal during 1889 amounted to 6,800 tons; during 1890, to 1,700 tons.
By lighters; 300 tons per day; liable to interruption at outer anchorage in winter.	None	None	Cagliari, Tunis, Palermo, Marsala, <i>Licata</i> , Malta.	
By lighters, outside harbor, for vessels exceeding 17 feet draught; liable to interruption in winter.	Italian; 700 tons for use on railway.	None	Cagliari, Tunis, <i>Girgenti</i> , Malta, Messina.	Total coal importation, for the year 1890, amounted to 7,300 tons.
By baskets from top-weight (pontoon) lighters alongside; capacity of lighters, about 30 tons each; coal delivered as rapidly as it can be stowed, up to a rate of 100 tons per hour; no interruption.	British; about 30,000 tons Cardiff kept on hand.	None	Gibraltar, Algiers, Cagliari, Tunis, Girgenti, <i>Licata</i> , Catania, Messina, Naples, Piræus, Alexandria, Port Said.	At this port about 10,000 tons of coal are kept piled on lighters ready for immediate delivery.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Syracuse, Sicily.	1890.	British .....	.....	3,000 tons imported during year.	.....	.....
Catania, Sicily.	Nov., 1883.	Cardiff	200	} 1,500 {	} \$6.60. \$6.00. \$5.20. Delivery and stowing, per ton, 55c.	} ½ mile to 1 mile.
		Newcastle	750			
		Richelleu	100			
Taranto, Italy.	1891.	.....	.....	14,000 tons imported during year.	.....	.....
Gallipoli, Italy.	Jan., 1891.	None for sale	None	None .....	.....	.....
			(Except small Govt. supply.)			
Brindisi, Italy.	May, 1891.	British	Ample supply: 125,000 tons imported, 1890.	.....	.....	.....
		Patent fuel	Ample supply on hand at local factories.	.....	.....	.....
Bari, Italy.	1891.	Welsh	} 30,000 tons imported per year. {	.....	.....	.....
		English				
		French				
Barletta, Italy.	1890.	.....	.....	8,000 tons imported during year.	.....	.....
Rodi, Italy.	Sept., 1883.	None	None	None .....	.....	.....
Ancona, Italy.	Feb., 1891.	.....	.....	Good supply.	.....	.....
Venice, Italy.	Sept., 1883.	Welsh	} 22,800	25,000	\$5.50 to \$6.50; delivery and stowing, per ton, 20 c. to 70 c.	1 to 1½ miles to usual anchorage for men-of-war.
		English				
		Scotch				
		Istrian				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	Torpedo-boat stations at Syracuse (secondary) and at Augusta.	None	Malta, Catania, Messina.	
By lighters; slow; sometimes interrupted by heavy storms, or by SE. wind during equinox.	Italian, at Messina.	None	Naples, Messina, Malta, Taranto, Brindisi, Alexandria.	
	Italian, at dockyard; secondary stations for torpedo boats at Cotrone and Gallipoli.	None	Malta, Catania, Messina, Patras, Zante, Argostoli, Corfu, Brindisi, Venice.	
	Secondary station for torpedo-boats.	None	Catania, Messina, Taranto, Brindisi.	
	Italian Govt. depot; supply exhausted at date; secondary station for torpedo-boats at Otranto.	None	Malta, Catania, Messina, Taranto, Bari, Venice, Trieste, Corfu, Patras, Alexandria, Port Said.	P. and O. Co. recommenced coaling their steamers at this port in the latter part of 1890; of the total coal importation for the year, 72,000 tons were for the patent-fuel works and railway, and 28,000 tons for the P. and O. Co.
Alongside quay; coal brought to ship in carts and passed on board; rapid.	Italian, for torpedo-boats; secondary station.	None	Corfu, Brindisi, Ancona, Venice, Trieste.	
	Manfredonia; secondary station for torpedo-boats.	None	Corfu, Brindisi, Bari, Ancona, Venice, Trieste.	Only steamers of moderate size can enter harbor.
No facilities	Tremiti Ids.; secondary station for torpedo-boats, 1887.	None	As for Barletta.	No harbor; open beach.
By lighters; no interruption; vessels drawing about 20 feet can go alongside wharf.	Italian; also, secondary, for torpedo-boats, at Ortona and Porto Corsini.	None	Corfu, Brindisi, Bari, Pola, Fiume, Venice, Trieste.	There are works at Ancona for the manufacture of patent fuel for the South Italian Railway.
From lighters, by tubs and baskets; slow; no interruption; vessels not exceeding 21 feet draught can go alongside wharf.	Italian, at arsenal (15,000 tons on hand, Sept., 1883); also at Alberoni, 1889.	In province of Istria, Austria, near Trieste; coal of inferior quality; also, lignite mine, 50 miles N.W. of Venice.	Brindisi, Bari, Ancona, Trieste, Pola, Fiume.	Coal importation at Venice, during 1890, amounted to 534,000 tons.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Trieste, Austria.	Oct., 1883.	Welsh	2,000	} 3,000 {	\$6.96 to \$7.20. \$5.84. Delivery, per ton, 72c. to 96c.	½ mile.....
		English	150			
		Scotch	1,500			
		Austrian	Large supply.			
	July, 1888.	Welsh			\$5.92.	
Pola, Austria.	June, 1889.		Large supply maintained by Government for naval use.			
Fiume, Austria.	Oct., 1883.	Welsh	} 1,300	1,300 {	\$6.96 to \$7.20. Delivery, per ton, 72c. to 96c.	½ mile.....
		English				
Spalato, Austria.	1889.					
Cattaro, Austria.	1886.	None for sale	Government supply for naval use.			
Corfu, Id. of Corfu, Greece.	Sept., 1883.	Welsh	500	} 1,000 {	\$8.00, alongside; delivery and stowing, per ton, £0c. \$7.91.	½ mile.....
		English	1,000			
	July, 1888.	Welsh				
Argostoli, Id. of Cephalonia, Greece.	Sept., 1883.	Welsh	760	} 1,200 {	\$6.60 to \$7.20. \$6.00, f. o. b.	About ½ mile.
		French	350			
Patras, Greece.	Sept., 1883.	English	4,500	2,000	\$7.80, f. o. b.	½ mile.....
	1889.	Welsh	} 18,000 tons imported { English		\$6.08, at pile. \$5.48, at pile.	
Zante, Id. of Zante, Greece.	Nov., 1887.	English		} 800 {	Prices range from \$5.81 to \$9.67; delivery and stowing, 96 cents; in autumn, \$1.44.	¼ to ½ mile, at usual anchorage.
		Welsh				
Navarino, Greece.	Sept., 1883.	Welsh	Supply maintained by Government.			
Kalamata, Greece.	1891.					
Piræus, Greece.	Sept., 1883.	Cardiff	6,500	} 7,000 {	\$5.28 to \$5.52. \$5.04 to \$5.28. Delivery, per ton, 96c.	.....
		Newcastle	3,500			
	July, 1886.	Cardiff	} 20,000 {		\$4.87 to \$5.48.	
		Newcastle				
Ergasteria, Greece.	Mar., 1886.	Cardiff	} 1,000 {	1,000 {	\$4.50, f. o. b.	About ½ mile
		Newcastle				

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling, rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; 150 tons per day; liable to interruption in November and December.	Austrian, at Pola; Italian, at Venice.	In Istria and Dalmatia, to a limited extent; also in Styria and Croatia; more extensive further inland, in Hungary, Moravia, and Bohemia.	Brindisi, Bari, Ancona, <i>Venice</i> , Pola, Fiume.	Total coal importation, during the year 1889, amounted to 137,000 tons. The Styrian, Istrian, and Dalmatian coals, though extensively used by Adriatic steamers, are unsuitable for naval use.
	Austrian, at dockyard; smaller, at Zara and Sebenico.		<i>Venice</i> , Trieste, Fiume, Ancona.	
By lighters; 150 tons per day; liable to interruption in November and December.	Austrian, at Pola.	See Trieste.....	<i>Venice</i> , Trieste, Pola, Ancona.	Coal importation during 1891 amounted to 49,000 tons.
	Austrian.....		<i>Ancona</i> , Brindisi.	
	Austrian; also at Gravosa.		Anconia, <i>Brindisi</i> .	1890.—Capacity of Government coal sheds, 20,000 tons.
By lighters; 200 tons per day; liable to interruption in winter by winds from NW. to NE.	Greek; small supply; not regularly maintained.	None.....	Ancona, Brindisi, Taranto, <i>Argostoli</i> , Patras, Zante, Messina.	
Poor facilities; can obtain about 50 tons per day; liable to interruption in December and January.	None.....	None.....	Brindisi, Corfu, Patras, <i>Zante</i> , Messina.	Coal chiefly in hands of mill-owners.
By lighters; 200 tons in 12 hours; rarely interrupted.	Greek; 500 tons (1883).	None.....	Brindisi, Corfu, <i>Argostoli</i> , Zante, Messina.	
By lighters of 25 to 30 tons capacity; poor facilities; slow; liable to interruption in outer port.	Greek, at Patras and Navarino.	None.....	Messina, Brindisi, Corfu, <i>Argostoli</i> , Patras, Navarino, Piræus.	Not recommended as a coaling port.
	Greek.....	None.....	Patras, <i>Zante</i> , Piræus.	
By lighters, if coal is obtainable; harbor improvements in progress.	Greek, at Navarino.	None.....	Patras, Zante, <i>Navarino</i> , Piræus.	
By lighters in harbor; slow; liable to interruption in spring by heavy rains.		Lignite at Kumi, on north coast of island of Eubœa; unsuitable for steaming.	Malta, Patras, Zante, <i>Ergasteria</i> , Syra, Dardanelles, Smyrna, Alexandria.	1891.—Yearly importation of coal from Great Britain, 100,000 tons.
By lighters; 80 tons per hour.	None.....	As for Piræus..	<i>Piræus</i> , Syra.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Syra. Id. of Syra, Greece.	Sept., 1883.	Cardiff.....	2,500	} 3,000	\$6.00, alongside; \$6.24, stowed.	½ mile.....
		Newcastle.....	1,000				$5.28, alongside; $5.52, stowed.
	Sept., 1888.	Cardiff.....	} 2,000	.....	\$4.87, stowed; average cost.	
	Newcastle.....					
	1891	Cardiff.....			\$5.23 to \$5.66.	
Volo, Greece.	1890.	.....			
Salonica, Turkey.	Sept., 1883.	Cardiff.....	1,200	1,200	\$6.72 to \$7.68, stowed.	About ¼ mile.
	1890.	British.....		9,000 tons im- ported dur- ing year.	\$5.84 to \$6.81, f.o. b.	
Dardanelles, Turkey.	May, 1884.	British.....	1,000	1,000	\$6.81 to \$7.30. Delivery and stowing, per ton, 48c. to 72c.	About ¼ mile.
Constantinople, Turkey.	Nov., 1889.	Welsh.....	20,000	} 23,000	\$6.48, stowed.	About ¼ mile. at usual an- chorage for men-of-war.
		English.....	10,000				Small supply.	$5.72, stowed.
		Turkish (Heraclea)				
	1891.	Welsh (Cory's Merthyr)			\$6.08, f. o. b.; Austrian Govt. contract for the year.	
	May, 1892.	Welsh.....			\$5.60, alongside, \$5.72, stowed, Golden Horn; \$6.33, alongside, \$6.45, stowed, upper Bospho- rus; German Govt. contract to June, 1893.	
Varna, Bulgaria.	1891.	British (chiefly Welsh)		5,000 tons im- ported dur- ing year.		
Sulina, Roumania.	Jan., 1885.	Newcastle.....	} 5,000	} 5,000	\$6.00, f. o. b.	
		Cardiff.....				
Galatz, Roumania.	1890.	British.....	Considerable supply.			
Ibrail, Roumania.	1891.	British.....		92,000 tons im- ported dur- ing year.		
Rustchuk, Bulgaria.	Sept., 1883.	Welsh.....	600	250	\$9.00 to \$10.00. \$6.11.	Coal stores on river bank; 30 to 100 yards, according to state of river.
		Hungarian (Fünfkirchen)	2,600	2,500		
	1891.	British.....		1,500 tons im- ported dur- ing year.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters of 8 to 30 tons capacity; 200 to 300 tons per day; no interruption.	None	None	Malta, Patras, Zante, Piræus, <i>Ergasteria</i> , Salonica, Dardanelles, Smyrna, Alexandria.	Importation of coal, during 1890, amounted to 26,000 tons; prices are usually lowest in August and September.
By lighters, when coal is obtainable.	None	None	Syra, <i>Ergasteria</i> , Salonica.	Coal is imported.
By lighters; moderately rapid; sometimes interrupted by wind in summer.	Turkish; irregularly maintained; Black Sea coal.	None; several deposits unworked.	Piræus, Ergasteria, Syra, <i>Yolo</i> , Smyrna, Mitylene, Dardanelles.	
By lighters of about 5 tons capacity; 80 to 100 tons per day; liable to interruption, especially in winter.	Turkish; small supply, Black Sea coal; irregularly maintained.	None	Piræus, Ergasteria, Syra, Salonica, Constantinople, <i>Mitylene</i> , Smyrna.	Yearly coal receipts amount to about 3,000 tons, imported by the tug-boat company, chiefly for its own use.
By lighters of 30 to 50 tons capacity; 30 to 40 tons per hour; sometimes interrupted by southerly winds in winter except in the Golden Horn.	None (1885).	Bituminous, at Heraclea, Asiatic Turkey, about 120 miles distant.	Piræus, Ergasteria, Syra, Salonica, Smyrna, Mitylene, <i>Dardanelles</i> , Sulina, Odessa, Nicolaieff, Sebastopol, Kertch, Novorossisk, Batoum, Trebizond, Heraclea.	Total arrivals of coal from Great Britain, during 1888, amounted to 811,000 tons, of which 317,000 tons were for Constantinople, and 494,000 tons destined to Black Sea ports.
By lighters at anchorage in 5 to 10 fathoms.		None	Constantinople, <i>Sulina</i> , Odessa.	
Alongside wharf; rapid; by lighters; 200 tons per day.			Constantinople, <i>Galatz</i> , Odessa.	Port available for vessels of 20 feet draught.
By lighters in river; wet docks under construction.			Sulina, <i>Ibrail</i> , Rutchuk.	Navigation interrupted from middle of December to middle of March.
By lighters in river; wet docks approaching completion.			Sulina, <i>Galatz</i> , Rutchuk.	Danube usually frozen over throughout winter.
By laborers with baskets; moderately rapid; no interruption during season of navigation; danger from floating ice early in season.	Bulgarian, at arsenal, 1883; no longer maintained, 1891.	None	<i>Ibrail</i> , Galatz, Sulina.	Coal from the Fünf-kirchen mines obtainable to any amount upon about three weeks' notice, when river is not obstructed by ice, except in case of low water at Iron Gates.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Odessa, Russia.	Oct., 1889.	Cardiff Newcastle Donetz	} 3,000 } 5,000 }	} 7,500 }	\$6.08. \$5.60. \$4.87. Lighterage and stowing, extra.	About $\frac{1}{2}$ mile, when coal- ing by light- ers.
Nicolaieff, Russia.	Oct., 1889.	British (for sale) Russian (Donetz)	1,200	} Large supply. }	\$5.35 to \$6.08. \$4.87. Delivery, extra.	.....
Sebastopol, Russia.	Mar., 1891.	Russian (Donetz)	Ample supply.		.....	.....
Kertch, Russia.	Nov., 1889.	Russian (Donetz)	.....	33,000 (during sea- son of navi- gation).	\$4.38 to \$5.35.	.....
Mariopol, Russia.	1892.	Russian (Donetz)	.....	198,000 tons shipped, 1890.	.....	Light-dr'ght vessels go to the coal chute.
Taganrog, and Rostoff-on-Don, Russia.	Apr., 1892.	Russian (Donetz): Anthracite Bituminous....	} Large supply directly } from mines. }		\$4.02. \$3.40. Delivery, 67c.	About 30 miles from Rostoff to Taganrog Roads.
Novorossiisk, Russia.	Nov., 1889.	Russian (Donetz)	.....	.....	\$4.38 to \$5.35.	.....
Poti, Russia.	Jan., 1890.	Native..... (Tkviul)	.....	.....	.....	.....

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters, or at wharf, with 21 feet of water alongside; port often closed by ice in winter.		None	Constantinople, Varna, Sulina, <i>Nicolaieff</i> , Sebastopol, Kertch, Novorossisk, Batoum.	Coal receipts, 1890: Great Britain, 139,000 tons; Southern Russia, 124,000 tons. Importation of British coal has greatly decreased since duty was raised, Sept., 1890.
At quay; 20 feet of water alongside; port kept open by ice-breaker throughout greater part of winter.	Russian, at dockyard; 1,500 tons British.		Constantinople, Varna, Sulina, <i>Odessa</i> , Sebastopol, Kertch, Novorossisk, Batoum.	Importation of coal from Great Britain fell to 1,835 tons in 1891.
	Russian; 6,000 tons British coal received, 1890; to be replaced by Russian.	None	Constantinople, Varna, Sulina, <i>Odessa</i> , Nicolaieff, Kertch, Novorossisk, Batoum, Trebizond, <i>Heraclea</i> .	The use of Russian coal, in preference to English, by vessels of the Black Sea fleet, was adopted in 1890, as the result of the report of a naval commission. Importation of foreign coal at Sebastopol has practically ceased since duty was increased (Sept., 1890) from \$1.45 to \$2.03 per ton.
By lighters; harbor available only for light-draught vessels; navigation interrupted in winter by ice.	Sebastopol.		Sebastopol, Mariopol, <i>Taganrog</i> , <i>Novorossisk</i> , Batoum.	1890.—Minimum depth in Yenikale Channel, 19 feet; to be deepened to 20.
Vessels exceeding 14 feet draught can not enter the new coal port; depth is to be dredged to 18 feet; navigation interrupted by ice during four months.		Extensive in Donetz basin; output, 1889, of 12 collieries on Mariopol branch, Donetz railway, 725,000 tons.	Kertch, <i>Taganrog</i> .	The new coal port was opened April 25, 1890.
By lighters or steam barges at anchorage in <i>Taganrog Roads</i> ; navigation interrupted from end of November to end of March.		Anthracite at <i>Grushefka</i> (<i>Azoff Coal Co.</i>); bituminous at <i>Hughesoffka</i> (<i>New Russia Co.</i>); also a number of other collieries in Donetz basin.	<i>Mariopol</i> , Kertch.	Total coal output of the Donetz basin, during the year 1889, was 3,110,000 tons.
At railway jetties, in 24 feet of water; liable to interruption by gales; harbor improvements in progress.		None; rail connection to mines of the Donetz coal basin.	Sebastopol, Kertch, <i>Poti</i> , Batoum, Trebizond.	
	None in immediate vicinity.	At <i>Tkviuni</i> , about 80 miles distant by rail; coal of inferior quality.	Sebastopol, Kertch, Novorossisk, <i>Batoum</i> , Trebizond.	No coal imported.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Batoum, Russia.	Oct., 1889.	Turkish (Heraclea)		4,500 (Subject to extensive fluctuation.)		
Trebizond, Asiatic Turkey.	Oct., 1889.	Turkish (Heraclea)		Variable supply.		
Samsoun, Asiatic Turkey.						
Heraclea, Asiatic Turkey.	Oct., 1889.	Bituminous (native)				
Mitylene, Id. of Mitylene, Asia Minor.	Sept., 1883.	Cardiff..... Heraclea..... (Owned by the Turkish Govt.)	380 110	500	\$8.64 to \$8.88, stowed. \$6.00 to \$6.24, stowed.	$\frac{1}{2}$ mile.....
Smyrna, Asia Minor.	Nov., 1887.	Cardiff..... Newcastle.....	3,000	3,000	\$4.38 to \$5.35.	About $\frac{1}{2}$ mile.
	Oct., 1888.	Cardiff (Ocean Merthyr)			\$6.38.	
Castro, Id. of Chios, Asia Minor.	Oct., 1885.	Newcastle.....	50 (For local use.)	50	\$6.77.	About $\frac{3}{4}$ mile.
Vathi, Id. of Samos, Asia Minor.	Oct., 1885.	None.....	None	None		
Suda Bay, Crete.	Aug., 1886.	None for sale	None	None (Except Govt. supply.)		
Rhodes, Id. of Rhodes, Asia Minor.	Oct., 1885.	Cardiff.....	60 (For local use.)	60	\$6.96.	About $\frac{1}{2}$ mile.
Limasol, Cyprus.	Oct., 1885.	Cardiff.....	25 (For local use.)	25		
Larnaca, Cyprus.	July, 1890.	British.....		Uncertain.....		
Mersina, Asia Minor.	Oct., 1883. 1891.	None..... Bituminous.....	None	None 1,500 tons imported during year.		

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
		<i>See Poti</i>	Constantinople Odessa, Sebastopol, Kertch, Novorossiask, <i>Poti</i> , Trebizond, Heraclea.	
By lighters, at anchorage.	None	None; deposits unworked.	Novorossiask, <i>Batoum</i> , Heraclea.	
	None	None	<i>Batoum</i> , <i>Trebizond</i> , Heraclea.	
By lighters; about 40 tons per day; coal brought from mines by tramway.	None	Mines 9 miles distant; also near Koshu, 20 miles distant; output, 30,000 to 50,000 tons per year.	<i>Constantinople</i> , Odessa, Sebastopol, Kertch, Novorossiask, <i>Batoum</i> , Trebizond.	
In bags, from lighters alongside; slow; sometimes, but rarely, interrupted in winter.	Small supply of Turkish coal maintained by Govt. (for sale).	None	Constantinople <i>Dardanelles</i> , Salonica, Smyrna, Syra, Piræus.	
By lighters or large pontoons; coal passed on board in baskets; 500 tons per day; no interruption in inner harbor; sometimes interrupted outside in Feb. and Mar.	Turkish; 500 tons Cardiff on hand (1883).	None	Constantinople Dardanelles, <i>Mitylene</i> , Piræus, Syra, Beirut, Port Said, Alexandria.	Total coal importation, during 1888, amounted to 59,000 tons, of which 52,000 tons came from Great Britain.
No facilities.....	Turkish, at Smyrna.	None	Mitylene, <i>Smyrna</i> , Syra, Piræus.	
No facilities.....	None	None	Mitylene, Smyrna, <i>Syra</i> , Piræus.	
	Turkish, at dockyard; considerable supply.	None	Piræus, <i>Syra</i> , Beirut, Alexandria.	
By lighters, when coal is obtainable; liable to interruption in winter.	None	None	Smyrna, <i>Syra</i> , Beirut, Alexandria.	
No facilities.....	None	None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	
By lighters alongside, at anchorage in roadstead, when coal is obtainable.		None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	Total yearly coal importation into island of Cyprus, from 1,000 to 2,000 tons.
	None	None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	1891.—Coal imported is chiefly for use of Mer-sina, Tarsus, and Adana Railway.

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Alexandretta, Asia Minor.	Oct., 1883.	None	None	None		
Latakia, Syria.	1885.					
Tripoli, Syria.	Oct., 1883.	None	None	None		
Beirut, Syria.	Oct., 1887.	Newcastle	800	} 3,000	\$8.00 to \$8.50, stowed.	½ mile.....
		Cardiff.....	200			
		Patent fuel..... (French)	2,000			
Sidon, Syria.	Oct., 1883.	None	None	None		
Haifa, Syria.	Oct.,	None	None	None		
Jaffa, Syria.	1883. Oct., 1883.	Welsh..... } English..... } Patent fuel..... } (French)	70	500	\$9.00 to \$10.00. \$8.00.	½ mile to 1 mile.
Port Said, Egypt.	Oct., 1886.	Cardiff..... } Newcastle..... }		10,000 to 60,000	\$5.11 to \$5.35, stowed.	
	1889.	Cardiff..... } Newcastle..... }	985,000 tons imported		\$6.57, stowed. \$6.08, stowed.	
	1891.	Cardiff (Cory's Merthyr)			\$5.60, f. o. b.; Austrian Govt. contract for the year.	
	1892.	Cardiff.....			\$4.87, alongside; \$4.99, stowed; German Govt. contract, to April, 1893.	
Alexandria, Egypt.	Feb., 1889.	Cardiff (Insole's Merthyr)			\$6.81, stowed.	
	Apr., 1889.	Cardiff (Locket's Merthyr)			\$7.91, stowed.	
Tripoli, Tripoli.	1889.	Bituminous (not specified)		4,200 tons imported during year.		
Tunis, Tunis.	Nov., 1886.	Cardiff.....	500	1,000	\$5.00, f. o. b.; stowing, per ton, 25c.	About 1½ miles.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
	None	None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	
No facilities	None	None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	
	None	None	Smyrna, <i>Beirut</i> , Port Said, Alexandria.	
By lighters of 5 to 7 tons capacity; 150 tons per day in fine weather; liable to delay and occasional interruption, December to April.		None	Piræus, Syra, Smyrna, <i>Jafa</i> , Port Said, Alexandria.	The importation of British coal amounts to from 1,500 to 2,000 tons per year, and of French briquettes, to about 7,000 tons per year.
	None	None	<i>Beirut</i> , and as for Beirut.	
	None	None	Beirut, <i>Jafa</i> , Port Said, Alexandria	
By lighters; liable to interruption by storms, December to April.	None	None	Piræus, Syra, Smyrna, <i>Beirut</i> , Port Said, Alexandria.	Importation of coal during 1891 amounted to 2,200 tons, chiefly English, for use on railway to Jerusalem, under construction.
By large lighters of 50 to 80 tons capacity; large supply kept piled on lighters ready for immediate delivery; speed of coaling limited only by stowing facilities.	None	None	Malta, Messina, Brindisi, Piræus, Syra, Smyrna, Beirut, <i>Alexandria</i> , Suez, Perim, Aden.	Coal imports for 1890 amounted to 1,032,585 tons; freights from Cardiff during the same year ranged from \$1.70 to \$2.68; of the coal imported, usually about $\frac{1}{2}$ is Welsh and about $\frac{1}{2}$ North Country coal; coal prices at Port Said are commonly lower than Suez prices, by from \$2.43 to \$2.92 per ton.
		None	<i>Port Said</i> , and as for Port Said.	Coal importation (1890), 494,500 tons, chiefly Welsh.
By lighters alongside....	British, at Malta, the nearest.	None	Alexandria, <i>Malta</i> , Tunis.	
By lighters, at anchorage in roadstead; 15 tons per hour; liable to interruption by wind from seaward.	French, at Biserta, to be established; British, at Malta.	None	Malta, Licata, <i>Girgenti</i> , Cagliari, Bona, Algiers.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Bona, Algeria.	1890.					
Philippeville, Algeria.	1891.					
Algiers, Algeria.	Apr., 1888.	Cardiff..... } Newcastle..... } Patent fuel..... }	Large supply.		\$5.36, stowed.	$\frac{1}{2}$ mile.....
Oran, Algeria.	Oct., 1887.	Cardiff.....	3,000	3,000	\$4.38 to \$4.87.	$\frac{1}{2}$ mile.....
Beni Saf, Algeria.	Nov., 1885.	Welsh..... } English..... }	800	500	\$7.25. \$6.25.	Coal hulk at anchorage.
Tangier, Morocco.	Nov., 1884.	English.....	Small supply.			About $\frac{1}{2}$ mile.
Rabat, Morocco.						
Mogador, Morocco.						
Graciosa Id., Azores.	1885.	None.....	None.....			
Santa Cruz, Flores Id., Azores.	1890.					
Horta, Fayal, Azores.	Dec., 1889.	Cardiff..... } Newcastle..... }	1,500 } 500 }	2,000	\$8.64, alongside. Delivery and stowing, per ton, 12c.	300 to 1,200 yards.
Angra, Terceira, Azores.						
Ponta Delgada, St. Michael's, Azores.	July, 1885.	Cardiff.....	3,000	3,000	\$7.40, stowed.	300 to 1,200 yards.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling: rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, en route. (The nearest in italics.)	Remarks.
By lighters, or at quay-side; no interruption in either case.	French, for torpedo-boats.	None	Tunis, Cagliari, <i>Philippeville</i> , Algiers.	
By lighters, or alongside quay; no interruption in either case.		None	Tunis, Cagliari, <i>Bona</i> , Algiers.	
By baskets from large top-weight (pontoon) lighters alongside; 40 tons per hour; no interruption.		None	Malta, Palermo, Tunis, Cagliari, <i>Palma</i> , Barcelona, Cartagena, Oran, Malaga, Gibraltar.	There are three large coal-dealing firms at this port.
By baskets from lighters of 15 to 100 tons capacity; rapid; no interruption.	None in immediate vicinity.	None	Algiers, Cartagena, Almeria, <i>Beni Saf</i> , Malaga, Gibraltar.	Coal importation during 1891 amounted to 49,000 tons.
By lighters, or alongside coal hulk; slow; liable to interruption by wind from NW.	None in immediate vicinity.	None	Algiers, Cartagena, <i>Oran</i> , Almeria, Malaga, Gibraltar.	Harbor has been improved since date of this report.
By lighters; poor facilities.	British, at Gibraltar.	None	Oran, Malaga, <i>Gibraltar</i> , Cadiz, Lisbon,	Total coal importation (1890), 1,200 tons.
	None	None	<i>Gibraltar</i> , Cadiz, Lisbon, Madeira.	
	None	None	<i>Gibraltar</i> , Cadiz, Madeira, Teneriffe.	
	None on island.	None	<i>Horta</i> , Ponta Delgada.	
Port is supplied with lighters.	None on island.	None	<i>Horta</i> , Ponta Delgada.	
By lighters of about 20 tons capacity; 30 to 35 tons per hour; sometimes interrupted outside breakwater, Nov. to Mar.; no interruption inside; work on breakwater still in progress, 1891.	None on island.	None	Lisbon, Gibraltar, <i>Ponta Delgada</i> , Madeira, Teneriffe, Dakar, Porto Grande, St. Thomas.	
		None	<i>Horta</i> , Ponta Delgada.	
Alongside break water quay, at coaling staithes, or by 20-ton lighters; rapid; sometimes, but rarely, interrupted during winter months.	None on island.	None	Gibraltar, <i>Horta</i> , Madeira, Teneriffe, Dakar, Porto Grande, St. Thomas.	

COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Funchal, Madeira.	Mar. 1887.	Cardiff	5,000	10,000	\$6.05, stowed.	About $\frac{1}{2}$ mile.
	May. 1889.	Cardiff (Tylor's Merthyr)			\$6.93, stowed.	
Santa Cruz, Tenerife, Canary Ids.	Dec. 1886.	Welsh	9,000	12,000	\$6.51, stowed.	600 to 800 yards,
		English	1,000			
	1891.	Welsh (Cory's Merthyr)			\$6.08, alongside; Austrian Govt. contract for the year.	
	1892.	Welsh			\$5.60, alongside; \$5.72, stowed; German Govt. contract to April, 1893.	
Las Palmas, Grand Canary, Canary Ids.	Apr. 1887.	Welsh	20,000		\$5.10, stowed.	$\frac{1}{2}$ to $\frac{3}{4}$ mile ...
		English				
Porto Grande, St. Vincent, Cape Verde Ids.	Sept. 1890.	Cardiff	46,000	40,000	\$8.52, alongside; \$8.74, stowed.	$\frac{1}{2}$ mile to 1 mile.
		Newcastle	2,000			
	Nov. 1891.	Cardiff (Cory's Merthyr)			\$7.91, alongside; \$8.15, stowed.	
	1892.	Cardiff			\$7.06, alongside; \$7.18, stowed; German Govt. contract to April, 1893.	
Porto Praya, Santiago, Cape Verde Ids.	Dec. 1888.	Cardiff	1,300	1,500	Prices are commonly the same as at Porto Grande.	600 to 800 yards.
Dakar, Senegal.	Mar. 1885.	Cardiff	Large supply.		\$9.20, alongside.	-----
	Patent fuel					
Bathurst, Gambia.	Sept. 1883.	None	None	Small supply; uncertain.		Coal stores at S. end of town.

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By lighters; rapid; no interruption, except by gales in winter.	None	None	Gibraltar, Lisbon, Fayal, Ponta Delgada, <i>Teneriffe</i> , Porto Grande, Dakar, St. Thomas.	1890.—Yearly coal importation ranges from 65,000 to 80,000 tons; prices are usually about \$2.50 in excess of Cardiff prices.
By large lighters, of 100 to 130 tons capacity; 30 tons per hour; sometimes interrupted by gales in winter.	Spanish, German, French, and Austrian contracts.	None	Gibraltar, Lisbon, Fayal, Ponta Delgada, Madeira, <i>Las Palmas</i> , Porto Grande, Porto Praya, Dakar, St. Thomas.	The coaling business of the Canaries, confined to the ports of Santa Cruz and Las Palmas, had grown, in 1888, from a yearly total tonnage of 38,000 tons (in 1886) to 216,000 tons; a further development in the importance of Santa Cruz as a coaling station was reported in 1891.
By bags from lighters alongside; 400 tons per day; sometimes interrupted in winter by gales from NE.; extensive harbor improvements in progress (unfinished, 1890).	None	None	Gibraltar, Lisbon, Fayal, Ponta Delgada, Madeira, <i>Teneriffe</i> , Porto Grande, Porto Praya, Dakar, St. Thomas.	
Coal in bags, delivered alongside in iron lighters of 20 to 100 tons capacity; 10 to 20 tons per hour; no interruption, as a rule.	None; German contract.	None	St. Thomas, Fayal, Ponta Delgada, Lisbon, Gibraltar, Madeira, <i>Teneriffe</i> , <i>Las Palmas</i> , <i>Porto Praya</i> , Dakar, Sierra Leone, St. Helena, Pernambuco, Bahia, Rio de Janeiro.	Coaling business of this port amounts to about 25,000 tons per month; freights from Cardiff commonly range from \$2.25 to \$2.75 per ton; duty on coal, 32 cents per ton.
By lighters of about 20 tons capacity from coaling station on Quail Island; no interruption, except occasionally in October and November.	French, at Dakar, the nearest.	None	<i>Porto Grande</i> , and as for <i>Porto Grande</i> .	
By iron lighters of 40 to 50 tons capacity; excellent facilities; no interruption; steamers of Cie. des Messageries Maritimes coal at this port.	French Govt. depot (1888).	None	As for <i>Porto Grande</i> .	
By flat-bottomed boats; tornadoes in July.	French, at Dakar, the nearest.	None	<i>Porto Grande</i> , <i>Porto Praya</i> , <i>Dakar</i> , Freetown, Elmina.	

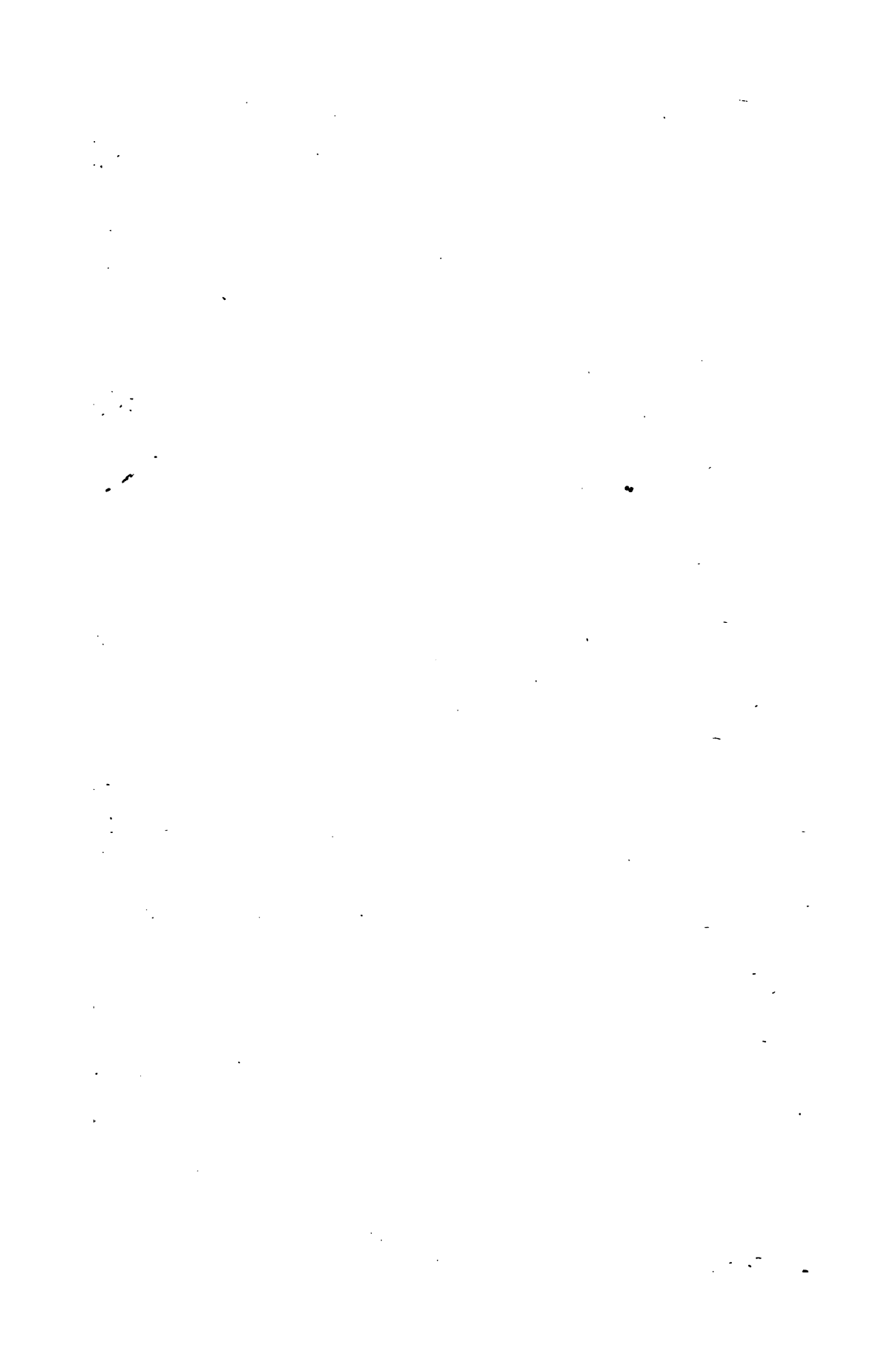
COALING, DOCKING, AND REPAIRING

Exhibit of coal to be had at the following European Station ports,

Name of port.	Date.	Kind of coal on hand.	Tons of each at date.	Average supply during year.	Cost, per ton.	Distance from coal pile to ship.
Freetown, Sierra Leone.	Nov., 1889.	Cardiff.....	800	1,000	\$9.12, stowed.	300 to 500 yards.
Monrovia, Liberia.	Dec., 1886.	None	None	None		
Grand Bassam, (Ivory Coast), Guinea.						
Elmina, (Gold Coast), Guinea.	Nov., 1889.	Patent fuel	400	250	\$11.98, stowed.	
Patent fuel		(Cardiff)				
Cape Coast Castle, (Gold Coast), Guinea.	Nov., 1889.	None.....	None.....	None.....		
Accra, (Gold Coast), Guinea.						
Quitta, (Gold Coast), Guinea.	1887.		Coal reported obtainable.			
Whydah, Dahomey.	1887.		Coal reported obtainable.			
Lagos, (Slave Coast), Guinea.	1884.	British.....				
Isabel, Fernando Po, Gulf of Guinea.	1884.	Welsh	1,000	900		200 yards to ¼ mile.
	English					
	Patent fuel.....					
Cameroon, West Africa.	Mar., 1889.				\$12.50, alongside; German Govt. contract to July, 1891.	
Libreville, Gaboon River, West Africa.	Jan., 1887.	Patent fuel	1,200	1,200	\$8.15, alongside; sold only by courtesy; paid for through diplomatic channels.	
		(French)	(Owned by	French Govt.)		
Banana, Congo River, West Africa.	Jan., 1887.	Cardiff	1,600	1,500 to 2,000	\$12.39, alongside; 61 cts. per ton extra to ves- sels outside Banana Creek.	

together with the usual supply on hand, cost, etc.—Continued.

Manner of coaling; rapid or slow, etc.	Government coaling stations in vicinity.	Coal mining in vicinity.	Next coaling ports, <i>en route</i> . (The nearest in <i>italics</i> .)	Remarks.
By baskets, from lighters of 3 to 10 tons capacity; 80 to 200 tons per day; much rain in summer; light tornadoes in April and October.	British; 2,000 tons patent fuel (1883).	None	Porto Grande, Porto Praya, Dakar, <i>Rathurst</i> , Elmina, Fernando Po, St. Helena.	
	British, at Freetown.	None	As for Freetown.	
		None	Dakar, Freetown, <i>Elmina</i> , Fernando Po.	
By surf-boats of about 2 tons capacity; 50 tons per day; liable to interruption.	British contract; a small supply maintained.	None	Dakar, Freetown, <i>Quitta</i> , Lagos, Fernando Po, St. Helena.	May, 1887.—Steamers of English line along Gold Coast will furnish coal to men-of-war at \$12.17 to \$14.60 per ton, f. o. b., steamer alongside.
	British contract, at Elmina.	None	Dakar, Freetown, <i>Elmina</i> , Fernando Po.	Coal hulk no longer maintained; vessels coal at Elmina. (See Remarks, Elmina.)
	British contract, at Elmina.	None	Freetown, <i>Elmina</i> , <i>Quitta</i> , Fernando Po.	(See Remarks, Elmina.)
	British contract, at Elmina.	None	Freetown, Elmina, <i>Whydah</i> , Fernando Po.	(See Remarks, Elmina.)
		None	Elmina, <i>Quitta</i> , Lagos, Fernando Po.	
By flats carrying about 4 tons each; slow; heavy rollers, June to August.		None	Elmina, <i>Whydah</i> , Fernando Po, Cameroon, Libreville.	Coal importation, during the year 1889, amounted to 2,316 tons, all from Great Britain.
By surf-boats, or by lighters, from coal stores near Point Pilon, Gravina Bay; slow; liable to interruption in tornado season.	British, by contract.	None	Freetown, Elmina, Lagos, <i>Cameroon</i> , Libreville, Banana, Loanda, St. Helena.	
	German, by contract.	None	Elmina, Lagos, <i>Fernando Po</i> , Libreville, Banana.	
By lighters of 30 tons capacity, from coaling jetty; lighters can not go alongside jetty at low water; 60 tons per day; liable to interruption.	French Govt. depot.	None	Elmina, Lagos, <i>Fernando Po</i> , Banana, Loanda, St. Helena.	
By small steamers, at anchorage off French Point, for vessels exceeding 15 feet draught; 100 tons per day.	None	None	Fernando Po, Libreville, <i>Loanda</i> , Mossamedes, St. Helena.	



II.

**PARTICULARS OF DOCKING AND REPAIRING FACILITIES OF
THE PORTS OF THE NORTH ATLANTIC, SOUTH ATLANTIC,
PACIFIC, ASIATIC, AND EUROPEAN STATIONS.**

Particulars of docking and repairing

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Port Arthur, Ontario.								
Duluth, Minn.	1891.	None.....						
West Superior, Wis.	1891.	Dry Dock, under construction (Amer. Steam Barge Co.)	554	500	.....	20	No tides...	
Ashland, and Washburn, Wis.								
Marquette, Mich.								
Sault Ste. Marie, Mich.								
Gladstone, and Escanaba, Mich.	1891.	None.....						
Green Bay, Wis.								
Manitowoc, Wis.	1892.	H. B. & G. B. Burger: Manitowoc Dry Dock ... Floating Dock (350 tons)	315	300	45	13	No tides...	
Sheboygan, Wis.	1891.	Floating Dock (400 tons) ... (Rieboldt, Wolter & Co.)						
Milwaukee, Wis.	1891.	Milwaukee Dry Dock Co.: Timber, No. 1..... Timber, No. 2..... Floating (1,000 tons) (10 sections)	..... 325	355 311	50 47	16 15	No tides...	
Chicago, Ill.	1891.	Miller Bros. Dry Dock Co.: No. 1..... No. 2..... No. 3.....	305 285 265	..... ..... .....	50 50 40	14 12 10	No tides...	
	1892.	Chicago Ship Building Co.: Dry Dock, projected ... (to be finished by July, 1893)	428	.....	70	17		

facilities of the following Lake ports.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Clyde Iron Co.....	1892.	Engines; all ordinary repairs.	8 ins.diam., forged; 19 ft. long, turned.	No facilities.	4 tons....	Facilities for minor repairs afforded by R. R. and other machine shops.
American Steam Barge Co.	1891.	Hulls only; large.				The dry dock was expected to be finished by July, 1892.
Lake Shore Iron Works.	1892.	Machinery.				
	1893.					R. R. machine shops at Escanaba.
Manitowoc Steam Boiler Works.	1891.					
Milwaukee Boiler Co.	1891.	Boilers only.				Minor repairs can be effected at the wooden shipbuilding yards.
Vulcan Iron Works (Sheriff's Mfg. Co.)	1892.	Engines; all ordinary repairs.	16 ins.diam., 20 ft. long, turned.	No facilities.	13 tons; screws of 14 ft. diam.	
Chicago Ship Building Co.	1892.	Hulls only, as yet.				90-ton shears.
Chicago Steam Boiler Works.	1891.	Boilers only.				
Excelsior Iron Works.	1892.	Engines and boilers.	6 ins. diam., forged; 8 ins. diam.; 34 ft. long, any diam., 17 ft. long, turned.	No facilities.	None	
Gt. Western Steam Boiler Works.	1891.	Boilers only.				
Kroeschell Brothers	1891.	Boilers only.				
Northwestern Boiler Works.	1891.	Boilers only.				
Pacific Boiler Works	1891.	Boilers only.				
Samson Steam Forge Co.	1892.	Heavy forgings made and finished.	12 ins.diam., 18 ft. long, forged and turned.	2 ins. diam., welded by electricity.	None	
Tarrant, Robert (Marine Engine Works).	1892.	Engines; all ordinary repairs.	30 ins.diam., 35 ft. long, turned.	No facilities.	20 tons...	
Tobin and Hamler Mfg. Co.	1891.	Engines and boilers.				
United States Boiler Works.	1891.	Boilers only.				
Variety Steam Boiler Works.	1891.	Boilers only.				
Vulcan Iron Works.	1892.	Engines; all ordinary repairs.	No facilities for heavy forgings.	36 ins	6 tons....	
Washington Steam Boiler Works.	1891.	Boilers only.				

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Grand Haven, Mich.	1892.	Floating, sectional, wood (T. W. Kirby.)	-----	140	42	8	-----	-----
Algoma, Ontario.	-----	-----	-----	-----	-----	-----	-----	-----
Collingwood, Ontario.	1891.	Dry Dock (Collingwood Dock Co.)	325	-----	50	15	No tides	..
Owen Sound, Ontario.	1891.	Dry Dock (Polson Iron Works Co.)	300	-----	55	12	No tides	..
Bay City, West Bay City, Saginaw, and East Saginaw, Mich.	1892.	Bay City Dry Dock (East Side.)	-----	306	41	13½	No tides	..
	1892.	Sectional, floating, 4 boxes (F. W. Wheeler & Co.)	165	-----	50	11		
Port Huron, Mich.	1891.	Dry Dock, timber, new (Dunford & Alverson.)	400	-----	62	16	No tides	..
	1891.	Floating (1,000 tons) (Wolverine Dry Dock Co.)	-----	200	40	14		
Port Sarnia, Ontario.	1883.	None	-----	-----	-----	-----		
Detroit, and Wyandotte, Mich.	1891.	Detroit Dry Dock Co.: Upper docks (Orleans St.) Timber, new	-----	378	58½ (55)	10½		
		Timber, old (dilapidated)	240	235	42	8		
		Lowerdocks (Springwells) Clark, No. 1, timber	-----	360	70½ (50)	10½		
		Clark, No. 2, timber	-----	220	60½ (32)	11½		
	1891.	Detroit Boat Works: Marine Railway (for ves- sels 150 ft. long).	-----	-----	-----	-----	No tides	..

of the following Lake ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Grand Haven Iron Works (Henry Bloecker & Co.) Ferryburg Steam Boiler Works (Johnston Bros.)	1892.	Engines; all ordinary repairs. Boilers only.	24 ins. diam., 20 ft. long, turned.	No facilities.	5 tons...	At Montague, 25 miles distant, the Montague Iron Works (Wilson & Hendrie) have built marine engines of 46 inches L.P. cylinder diam.
	1891.					
	1885.					
Polson Iron Works..	1890.	Hulls and machinery; large.				Facilities for all kinds of repairs. Polson Iron Works Co. have built steel vessels up to 2,600 tons register; also marine engines of 46 inches L. P. cylinder diam.
Wheeler, F. W., & Co. (West Bay City).	1892.	Hulls and engines; large.	6 ins. diam., 10 ft. long, forged and turned.	Any size...	None....	50-ton shears at this shipyard. The machinery for steamers built at West Bay City is chiefly constructed by the Frontier Iron Works, and Riverside Iron Works, Detroit.
Davidson, James.... (West Bay City).	1891.	Wood and composite hulls only.				
Bartlett, A. F., & Co. (East Saginaw).	1891.	Machinery.				
Hicks & Bros. (Saginaw).	1891.	Machinery; large.				
Marine Iron Works (Bay City).	1891.	Machinery.				
National Boiler Works (Bay City).	1891.	Boilers only.				
Wicks Bros. (East Saginaw).	1891.	Engines and boilers; large.	20 ins. diam., 24 ft. long, turned.	No facilities.	14 tons...	20-ton shears.
Dry Dock Iron Works.	1891.	Machinery.				
Phoenix Iron Works	1891.	Engines and boilers; large.				
	1883.					Two machine shops.
Detroit Dry Dock Co.	1891.	Hulls, engines, and boilers; large.	12 ins. diam.			The works of the Detroit Dry Dock Co., comprise a wooden shipbuilding yard, dry-docks, engine and boiler works, and repair shops, at foot of Orleans St., Detroit; steam forge and dry docks at Springwells; and iron and steel shipbuilding yard at Wyandotte. There are 100-ton shears at the new dry dock.
Brennan, John & Co.	1891.	Boilers only.				
Central Boiler Works.	1891.	Boilers only.				
Detroit Boat Works.	1891.	Hulls; small.				
Detroit Sheet Metal and Brass Works.	1891.	Copper-smithing.				
Eagle Iron Works...	1891.	Machinery.				
Frontier Iron Works	1892.	Engines; large.	7 ins. diam., 16 ft. long, forged; any diam.; 22 ft. long, turned.	No facilities.	10 tons, iron; ½ ton, brass.	Have built engines of 62 inches L. P. cylinder diam.
Riverside Iron Works (Samuel F. Hodge & Co.)	1891.	Machinery.				Have built engines of 50 inches L. P. cylinder diam.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Windsor, Ontario.								
Toledo, Ohio.	1891.	Toledo Dry Dock		188			No tides...	
	1892.	(A. Gilmore & Sons.) Marine Railway (1,500 tons) (Craig Ship Bdg. Co.)	450	200 (cradle)	45	8 (head)		
Sandusky, Ohio.	1892.	Marine Railway (300 tons) (John E. Monk.)	400	130 (cradle)	60 (slip)	8	No tides...	
Lorain, Ohio.								
Cleveland, Ohio.	1892.	Ship Owners' Dry Dock Co: Timber, old ...	350	340	502 465	16	No tides...	
		Timber, new ...	336	296	522 475	13½		
	1891.	Cleveland Dry Dock Co.: Timber Dock	312	300	40	11½		
Ashtabula, Ohio.	1892.	None						
Erie, Penn.	1884.	None						
Buffalo, N. Y.	1892.	Union Dry Dock Co.: No. 1		343	48	10½	No tides...	
		No. 2		343	44	15½		
	1892.	Robt. Mills & Co.: No. 1	320	300	46	13½		
		No. 2	280	260	40	12		

of the following Lake ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Craig Ship Building Co.	1892.	Hulls and small engines.	No facilities for large work.	No facilities.	None	40-ton sheers.
Eagle Machine and Iron Works.	1891.	Engines.				
Toledo Foundry and Iron Works.	1891.	Machinery.				
Monk, John E.	1892.	Hulls and engines; small.	8 ins. diam., turned.	No facilities.	None	In addition there are several machine and boiler shops.
Root, H. D.	1891.	General repairs; small.				Facilities for minor repairs to machinery at R. R. shops.
Cleveland Ship Building Co.	1892.	Hulls, engines, and boilers; large.	6 ins. diam., forged; 18 ins. diam., turned.	12 ins.	26 tons.	45-ton sheers.
Cleveland City Forge and Iron Co.	1892.	Heavy forgings made, and finished.	Any diam., 60 ft. long, up to 100 tons wt., forged and turned.	No facilities.	None	Made shaft for Str. Puritan, Fall River Line, 31 ins. diam., 37 ft. long, weighing 42 tons.
Globe Iron Works	1892.	Hulls, engines, and boilers; large.	6 ins. diam., 20 ft. long, forged; any diam., 18 ft. long, turned.	24 ins.	12 tons.	80-ton sheers.
Chase Machine Co.	1892.	Ordinary engine repairs.	15 ins. diam., turned.	No facilities.	None	
Continental Machine Co.	1891.	Machinery; small.				
Excelsior Iron Wks.	1892.	Machinery.				
River Machine and Boiler Works.	1891.					
McKinnon Iron Works.	1892.	Engines and boilers.	20 ins. diam., 21 ft. long, turned.	No facilities.	26 tons.	Several machine shops at Ashtabula.
Erie City Iron Works.	1892.	Engines and boilers; large.	10 ins. diam., 20 ft. long, forged and turned.	24 ins.	15 tons.	
Union Dry Dock Co.	1892.	Hulls only; large.				50-ton sheers.
Bell, David	1891.	Hulls only.				
Case, W. A.	1892.	Copper-smithing.				
Delaney Forge and Iron Co.	1892.	Heavy forgings made and finished.	45 ft. long, any diam., up to 25 tons wt., forged; 55 ft. long, turned.	No facilities.	None	
Eagle Boiler Works (M. Riter).	1891.	Boilers only.				
Farrar & Trefts	1892.	Engines and boilers.	No forge.	No facilities.	7 tons.	
King Iron Works	1891.	Machinery; large.				Casting propellers a specialty.
Lake Erie Eng'g Works (Hammond & Coon).	1892.	Engines and boilers; large.	36 ins. diam., 30 ft. long, turned.		Large engine castings.	
Tift, Geo. W., Sons & Co.	1892.	Engines and boilers; large.	20 ins. diam., forged; 30 ft. long turned.	No facilities.	16 tons.	

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Port Colborne, Ontario.	1884.	Dry Dock					No tides...	
St. Catherine's, Ontario.	1891.	Shicluna's Dry Dock.....	145		24	9	No tides...	
Port Dalhousie, Ontario.	1891.	Dry Dock (Muir Bros.).....	215		45	10½	No tides...	
Hamilton, Ontario.	1887.	None						
Toronto, Ontario.	1891.	Dry Dock	198		43	12	No tides...	
		(Toronto Bay Dock Co.)						
Port Hope, and Coburg, Ontario.	1883.	None						
Charlotte, N. Y.		.....					
Fairhaven, N. Y.		.....					
Oswego, N. Y.	1888.	Two, timber, small					No tides...	
Picton, Ontario.	1883.	None						
Belleville, Ontario.	1883.	None						
Kingston, Ontario.	1891.	Government Dry Dock.....	280		55	16	No tides...	
	1883.	Two Patent Slips (400 tons)						

Particulars of docking and repairing facilities

Brockville, Ontario.		.....					
Ogdensburg, N. Y.	1887.	Dry Dock					No tides...	
Prescott, Ontario.	1887.	None						

of the following Lake ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1883.					Facilities for minor repairs to machinery.
	1883.					Wooden shipbuilding is carried on.
Beckett Engine Co ..	1887.	Machinery; small.				Excellent work can be done by both establishments mentioned.
Mona Iron Works ..	1887.	Machinery; small.				
Doty, John, Engine Co.	1887.	Ordinary repairs.				Good work can be done by all the establishments mentioned.
Ingllis, John, & Sons.	1891.	Machinery.				
Polson, Wm., & Co ..	1887.	Machinery.				
Toronto Engine Works.	1887.	Large, to engines.	Any diam., 20 ft. long; turned.			
	1883.					A machine shop at Port Hope and one at Coburg.
	1891.					Good works at Rochester.
Kingsford, T., & Son	1888.	Machinery; small.				No shipbuilding at Oswego.
Vulcan Iron Works.	1892.	Machinery; small.	6 ins. diam., 25 ft. long.	Ordinary sizes.	4½ tons...	
	1883.					Indifferent facilities for machinery repairs.
Brown, G. & J., Manufacturing Co.	1890.					Two good shops at Belleville. At Deseronto, 16 miles distant, a dock and yard for small vessels of 150 to 200 tons register (1883).
Canadian Locomotive and Engine Co.	1890.	Large, to machinery.	No facilities for forging.			Most extensive engine works in Canada. Cylinders of 30 in. diam. have been cast; propellers of 12 ft. diam.
Kingston Foundry ..	1887.	Moderate.	6 ins. diam., 25 ft. long.			

of the following St. Lawrence River ports.

	1883.					A foundry and machine-shop.
	1883.					Facilities for machinery repairs.
None.....	1887.					

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Montreal, Quebec.	1891.	Double Dock	400 (in 2 sec- tions)		45	10½	No tides...	
	1891.	Tate's Dock	200		45	10½		
Sorel, Quebec.								
Three Rivers, Quebec.	1883.	None						
Quebec, Quebec.	1891.	Harbor Commissioners: Stone (Levis)	484	445	64	25½	17½	12
	1891.	John Roche: Timber (unfinished)	222		42			
		Floating (2,000 tons)	215		45	14		
		Floating (1,100 tons)	153		41	13½		
		Gridiron	325		46	15½		
	1891.	A. Russell: Floating (2,500 tons)	225		41½	15½		
		Floating (1,000 tons)	160		37	12		
		Gridiron	225		41	15		
	1891.	G. T. Davie: Floating (2,400 tons)	235		41	14		
		Floating (1,600 tons)	170		39	13		
	Patent Slip (400 tons)	500	130 (cradle)	40	9			

Particulars of docking and repairing facilities of

Gaspé, Quebec.	1883.	None						
Newcastle, New Brunswick.	1883.	None						
Summerside, Prince Edward Island.	1883.	None						
Tidnish, Nova Scotia.	1891.	Hydraulic Lift, unfinished. (Chignecto Marine Trans- port Railway.)		235	60	20		
Charlottetown, Prince Edward Island.	1883.	None						

the following *St. Lawrence River ports*.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
White, W. C.	1891.	Hulls only.				There are machine-shops connected with both dry docks; also several smaller ones along river front. Docks are of timber with masonry abutments. A basin connected with Tate's Dock enables vessels exceeding 200 ft. in length to be docked.
Beauchemin & Fils.	1890.	Hulls and machinery.				
None	1883.					
Carrier, Lainé, & Cie. (Levis).	1891.	Machinery: large.				Several machine shops in city.
Davie, G. T. (Levis).	1891.	Hulls and machinery.				

the following *North Atlantic Station ports*.

None	1884.					
None	1883.					Wooden shipbuilding is carried on.
None	1883.					Wooden shipbuilding is carried on.
	1891.					Dock not intended for ordinary use as a dock, but for lifting vessels of 2,000 tons for transportation to Amherst, Bay of Fundy, 17 miles distant; unfinished, Sept., 1891; railway expected to be in operation in 1893. Dock approached by artificial channel 3,000 ft. long, dredged to depth of 20 ft. at L. W.; 60 ft. wide, to be widened to 200 ft.
McKinnon & McLean (Kedale Foundry).	1891.	Small.				

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Pictou, Nova Scotia.	1891.	Patent Slip (1,200 tons).....		232 (cradle)	40	F'd, 13; aft, 20.	6	4
	1891.	Patent Slip (800 tons) (J. & J. Yarstin.)		178 (cradle)	40	F'd, 12; aft, 18.		
Georgetown, Prince Edward Island.	1883.	None.....						
Souris, Prince Edward Island.								
Port Hood, Cape Breton Id., Nova Scotia.	1891.	None.....						
Amherst, Magdalen Ids.	1883.	None.....						
Tilt Cove, Newfoundland.	1884.	None.....						
St. John's, Newfoundland.	1891.	Government timber (J. E. Simpson & Co., lessees).	610		66	24	3½	3½
	1891.	Floating, 4 sections, 350 tons (Dry Dock Co.)	135		49	11½		
	1888.	Patent Slip.....	100					
St. Pierre, Miquelon Ids.	1891.	Patent Slips (F. de Buf):					6½	4½
		No. 1	460	150 (cradle)		9½; 13½.		
		No. 2	300	75 (cradle)		8½; 11½.		
Sydney and North Sydney, Cape Breton Id., Nova Scotia.	1891.	North Sidney Patent Slips (Archibald & Co.):					5	4
		No. 1 (1,000 tons).....		220 (cradle)	40	F'd, 14; aft, 16.		
		No. 2 (250 tons).....		100 (cradle)				
		No. 3 (250 tons).....		100 (cradle)		F'd, 10; aft, 12.		
Lingan, Cape Breton Id., Nova Scotia.								
Cow Bay, Cape Breton Id., Nova Scotia.	1883.	None.....						
Louisburg, Cape Breton Id., Nova Scotia.	1883.	None.....						
Arichat, Madame Id., Nova Scotia.	1891.	None.....						
Port Hawkesbury, Cape Breton Id., Nova Scotia.	1892.	Strait of Canso M. R. Co.: Marine Railway..... (1,100 tons) Slipway (250 tons).....	650	200 (cradle)		F'd, 17; aft, 23.	4½	3
Port Mulgrave, Nova Scotia.	1883.	None.....						

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1884.					An iron foundry and machine shops. Engine and boiler works, and steam forge, 7 miles distant, on Intercolonial Railway.
None	1883.					
	1883.					Wooden shipbuilding is carried on.
None	1883.					
None	1883.					
None	1884.					
Simpson, J. E. & Co.	1891.	Large of all kinds.				Shops connected with dry dock.
Terra Nova Foundry and Boiler Works.	1887.	Large to machinery.	16 ins. diam., 20 ft. long, turned.	Any size	4 tons	40-ton sheers.
Victoria Engine and Boiler Works (James Angel).	1890.					
None	1883.					
	1884.					A machine shop at Sydney mines; also a small one at North Sydney.
	1883.					A machine shop at the mines.
None	1883.					
None	1883.					
None	1883.					
None	1883.					

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Cape Canso, Nova Scotia.	1883.	None.....						
Halifax, Nova Scotia.	1892.	Halifax Graving Dock Co.: Halifax Graving Dock. Bow and Stern Dock	593		89	30	6	5
	1892.	Patent Slips (Dartmouth): No. 1 (3,000 tons)		270 (cradle)	48	F'd. 14; aft. 18.		
		No. 2 (900 tons)		200 (cradle)	35	F'd. 9; aft. 14.		
		No. 3 (150 tons)		180 (2 cra- dles, each 90)	28	F'd. 9; aft. 14.		
Lunenburg, Nova Scotia.								
Liverpool, Nova Scotia.	1891.	Patent Slip (400 tons) (Marine Railway Co.)	300	108 (cradle)		F'd. 7; aft. 10.	8	5
Shelburne, Nova Scotia.								
Yarmouth, Nova Scotia.	1891.	Patent Slip (800 tons) (Marine Railway Co.)	600	150 (cradle)		10½; 13.		
Digby, Nova Scotia.	1884.	None.....						
Annapolis, Nova Scotia.	1884.	None.....						
Windsor, and Hantsport, Nova Scotia.	1891.	None.....						
Parrsborough, Nova Scotia.	1891.	None.....						
Port Joggins, Nova Scotia.	1884.	None.....						
Amherst, Nova Scotia.	1891.	Hydraulic Lift, unfinished .. (Chignecto Marine Trans- port Railway.)		235	60	20		

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None.....	1883.					
Halifax Graving Dock Co.	1891.					Government vessels have right of priority to use of dock. 30-ton sheers.
H. B. M. Dockyard Patterson, John.....	1889. 1887.	Small..... Boilers; large.		6 ins.....	24 tons....	
	1883.					Wooden shipbuilding is carried on.
	1883.					Facilities for minor repairs to machinery.
	1883.					Excellent facilities for ordinary repairs.
	1884.					Excellent facilities for all ordinary repairs. Wooden shipbuilding extensively carried on.
	1883.					Wooden shipbuilding is carried on.
	1884.					Facilities for ordinary repairs. Wooden shipbuilding largely engaged in.
	1884.					A machine shop at Windsor, and one at Hantsport.
None.....	1884.					
	1884.					Facilities for minor repairs.
	1891.					Dock not intended for ordinary use as a dock, but for lifting vessels of 2,000 tons for transportation to Tildnish, Gulf of St. Lawrence, 17 miles distant: 13 miles of railway track laid, September, 1891: dock approaching completion: tidal entrance basin (stone) under construction, 500 feet by 300 feet, with 60 feet width of gate, and 30 feet depth of water.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
St. John, New Brunswick.	1891.	Gridirons					27	23
St. Stephen, New Brunswick.								
Bangor, Me.	1892.	Marine Railway (1,000 tons). (E. & I. K. Stetson.)	500 (200 out water)	175 (cradle)	40	9	14	12
Belfast, Me.								
Rockland, Me.	1884.	Marine Railway						
		(North Marine R'y Co.)						
Bath, Me.	1891.	Marine Railway (1,300 tons). (New England Shipbuild- ing Co.)		200 (cradle)	43	F'd, 9; aft, 14.	7½	6½
Portland, Me.	1886.	Portland Dry Dock Co.:						
		No. 1, Simpson, timber.	415	387	{ 80 } { 45 }	23		
		No. 2, Simpson, timber.	200	175	40	12		
	1892.	Marine Railway (1,000 tons). (Portland Shipbdg. Co.)	650 (300 out water)	220 (cradle)	60 (slip)	14		
Portsmouth, N. H.	1892.	U. S. Government, floating; 8 sections; 5,300 tons. (Navy Yard, Kittery.)	350	337	90	23	9½	8½
Boston, Mass.	1892.	Navy Yard, granite.....	405		60	25	11½	10
	1891.	Simpson Patent Dry Dock Co.						
		No. 1, timber.	465		68	19		
		No. 2, timber.	250	233	45	19		
		No. 3, timber.	185	150	32½	15		
	1891.	Wm. F. Green & Son.....	165		36	12		
	1891.	Marine Railways:						
		East Boston Dry Dock Co.						
		No. 1 (600 tons) ..	720	200 (cradle)		F'd, 12; aft, 14.		
		No. 2 (1,800 tons).	700	250 (cradle)		F'd, 12; aft, 15.		
		Lockwood Mfg. Co	510	150 (cradle)		F'd, 7; aft, 13.		
	1891.	Coffer Dam						
		(Boston Coffer Dam Co.)						

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Fleming, Geo., & Son (Phoenix Foundry).	1890.	Machinery: large.	12 ins. diam., 28 ft. long, turned.	12 ins.	10 tons...	There are gridirons for repairs, both on St. John and Carleton sides of river. Wooden shipbuilding is extensively carried on. Facilities for repairs to iron or steel vessels are not good.
Fleming, W.	1891.	Machinery.	.....	.....	.....
Harris, Jas., & Co.	1891.	Machinery.	.....	.....	.....
Allan Bros (Carleton).	1891.	Machinery.	.....	.....	.....
None	1883.	.....	.....	.....	.....	.....
.....	1892.	.....	.....	.....	.....	Good facilities for repairs to engines and boilers. Considerable wooden shipbuilding
.....	1885.	.....	.....	.....	.....	Wooden shipbuilding carried on.
.....	1883.	.....	.....	.....	.....	One machine shop, and two foundries. Wooden shipbuilding carried on.
Bath Iron Works	1891.	Hulls, engines, and boilers: large.	Any diam., 20 ft. long, turned.	Any size. ....	.....	Wooden shipbuilding extensively carried on at this port.
Moulton, G., jr.	1891.	Machinery: small.	20 ft. long, turned.	.....	.....	.....
Portland Company's Locomotive Works.	1892.	Engines and boilers: large.	30 ins. diam.	Any size.	20 tons...	Wooden shipbuilding carried on at this port.
U. S. Navy Yard, Kittery.	1892.	Large .....	.....	.....	.....	There is one large machine shop in the city.
U. S. Navy Yard.	1892.	Large .....	.....	.....	.....	The Navy Yard Dock will take vessels 355 feet long.
Atlantic Works	1891.	Large	10 ins. diam., forged.	.....	.....	Atlantic Works have iron sheers 125 feet high, overhanging cap-sill of wharf by 30 feet, and capable of lifting 150 tons.
Blake, Geo. F., Mfg. Co.	1891.	Pumps only.	.....	.....	.....	25-ton sheers.
Central Iron Foundry (James Gurney & Co.)	1890.	Heavy castings.	.....	.....	.....	.....
Charles River Iron Works.	1892.	Boilers; large.	.....	.....	.....	.....
City Point Works	1891.	Hulls and machinery: large.	No forge; turn large sizes.	No facilities.	15 tons...	60-ton sheers.
Cunningham Iron Works Co.	1890.	Boilers only.	.....	.....	.....	.....
Fore River Engine Co. (Weymouth).	1892.	Engines; ordinary repairs.	8 ins. diam., 20 ft. long, turned.	No facilities.	None	18-ton sheers.
Hodge, E., & Co.	1890.	Boilers only.	.....	.....	.....	.....
Knowles Steam Pump Works.	1891.	Pumps only.	.....	.....	.....	.....
Lockwood Mfg. Co.	1892.	Hulls and engines; large.	Any diam., 37 ft. long, turned.	Any size	None	35-ton floating crane.

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Boston, Mass. (Continued.)								
New Bedford, Mass.	1892.	Fish Id. Marine Railway (200 tons).	350 (125 out water)	100 (cradle)	35 (slip)	12	4½	4
Newport, R. I.	1884.	Marine Railway (300 tons)						
Fall River, Mass.	1883.	Marine Railway (300 tons)						
Bristol, R. I.								
Providence, R. I.	1892.	Providence Dry Dock Co: Balance (1,300 tons) Marine Railway	200	180 (cradle)	63	15 11	4½	4
New London, Conn.	1892.	Marine Railway (800 tons) ... (Morgan Iron Works)	700	160 (cradle)		F'd, 9; aft, 20.	2½	2½
	1892.	Marine Railway (800 tons) ... (H. J. Crocker, Fort Neck.)		141 (cradle)	40 (cradle)	F'd, 7; aft, 12.		
New Haven, Conn.								
New York, N. Y.	1891.	N. Y. Floating Dry Dock Co.: No. 1, sectional (6,000 tons) No. 2, sectional (1,500 tons) No. 3, sectional (3,000 tons)	353 170 260		100 76 90	21 15 16	5	4
	1891.	Screw Dock Co.: No. 1 (1,000 tons) ... No. 2 (800 tons) ... No. 3 (200 tons) ...	160 120 75		35 35 26	13 13 13		
	1891.	People's (James Shewan) Balance (1,000 tons) Balance (600 tons)	140			13		
	1891.	Morgan & McGovern: Balance (1,200 tons)		200	78	8		
	1891.	Jenkins, Wm., & Co.: Sectional (1,200 tons)	175		63	15		
	1892.	John A. Davis: Floating (500 tons) ... Floating (300 tons) ...	130 105	130 105	46 30	9 9		

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Murray & Tregurtha.	1891.	Engines; small.				
National Boiler Works.	1890.	Boilers only.				
Paine, Jas. H., & Son.	1892.	Engines; small.	No large forging.	No facilities.	None	
Rawson & Morrison.	1892.	Engines and boilers.	10 ins. diam., 20 ft. long, forged; 34 ins. diam., 24 ft. long, turned.	No facilities.		25-ton sheers.
Robinson, H. S., & Co.	1892.	All ordinary repairs.	No facilities for heavy forging.	No facilities.	None	
South Boston Iron Works.	1891.	Heavy castings.				
Vannevar, Edmund B., & Co.	1890.	Copper-smithing.				
Webb & Watson	1891.	Machinery.				
	1884.					Small repairs can be effected by shops connected with marine railway.
	1891.					Several iron works, machinshops, and wooden shipbuilding yards.
Herreshoff Mfg. Co.	1892.	Hulls and machinery; small.	5 ins. diam., turned; no forge.	6 ins.	None	
Harris, Wm. A., Steam Engine Co.	1892.	Engines; work of moderate size.	20 ins. diam., 22 ft. long, turned.	No facilities.	12 tons	Several extensive engine establishments at Providence do not undertake marine work.
Hicks Boiler Works.	1884.	Boilers only.				
Morgan Iron Works.	1892.	Engines and boilers; large.	14 ins. diam., turned.	22 ins.	9 tons	35-ton sheers.
	1891.					Facilities for all ordinary repairs to machinery.
Empire Iron Works (John W. Sullivan).	1892.	Engines; work of moderate size.	7 ins. diam., forged; 15 ins. diam., 27 ft. long, turned.	No facilities.	None	
Fletcher, W. & A., Co.	1892.					See North River Iron Works, Hoboken.
Hauser Iron Works	1891.	Boilers only.				
Jonson Engineering and Foundry Co.	1892.	Hulls and engines.	5 ins. diam., forged.	No facilities.	5 tons	
Knowles & Kearney.	1890.	Copper-smithing.				
Morgan Iron Works (Delaware River Iron Ship Building and Engineering Co.)	1892.	Engines and boilers; large.	30 ins. diam., 50 ft. long, turned; no forge.	Any size	None	70-ton floating steam derrick. Ship-building yard of this firm is located at Chester, Penn.

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Nichols, David M ...	1891.	Boilers only.				
People's Iron Works	1891.	Machinery; small.				
Quintard Iron Works (N. F. Palmer, jr., & Co.)	1892.	Engines and boilers; large.	6 ins. diam., 12 ft. long, forged; 40 ins. diam., 75 ft. long, turned.			15-ton shears.
Roelker, H. B	1892.	Propellers only.				
Wheeler Condenser and Engineering Works.	1892.	Engines; large.	20 ins. diam., 16 ft. long, turned; no forge.	Any size ...	18 tons...	
Worthington Steam Pump Works.	1891.	Pumps only.				
U. S. Navy Yard ...	1892.	Large.				Granite Dock at navy yard will take vessels 329 ft. long; Simpson Dock, vessels 452 ft. long.
Central Forge Works (Whitestone, L. I.)	1892.	Large, to engines; heavy forgings.	40 ins. diam., 50 ft. long, forged and turned.	No facilities.	None ...	
Continental Iron Works.	1892.	Hulls, engines, and boilers; large.	No heavy forging.	No facilities.	20 tons...	
Cowles Engineering Company.	1892.	Machinery; work of moderate size.	10 ins. diam., 22 ft. long, forged and turned.	No facilities.	4,000 lbs.	
Davidson, M. T.	1892.	Pumps only.				
Downing & Lawrence.	1892.	General repairs; small.		No facilities.	None ...	
Elsesser, Michael ...	1891.	Engines; small.				
Franklin Steam Boiler Works.	1891.	Boilers only.				
Handren & Robins (Erie Basin Dry Docks and Albany St. Iron Works).	1891.	Hulls, engines, and boilers; large.	Any diam., 32 ft. long, turned.	Any size		Two 30-ton derricks.
Long Island Machine and Marine Construction Co. (Long Island City).	1892.	Hulls, engines, and boilers; small.				
Morse Iron Works (E. P. Morse).	1892.	Large, to machinery; moderate, to hulls.	12 ins. diam., 20 ft. long, forged and turned.	No facilities.	None ...	
Pioneer Iron Works	1888.	Machinery.				
Riley & Cowley	1892.	Engines; small.	8 ins. diam., 24 ft. long, turned.	No facilities.	None ...	
South Brooklyn Steam Engine Works.	1891.	Engines; small.				
Vulcan Steam Boiler Works.	1892.	Boilers only.				
Ward & Co. (Astoria, L. I.)	1892.	Engines; ordinary repairs.	36 ins. diam., 22 ft. long, turned; no forge.	No facilities.	2½ tons ...	

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.		
			Over all.	Over blocks.			Sp'gs.	Neaps	
Jersey City, N. J.	1891.	Allison Dry Dock Co.:				12			
		Sectional (2,000 tons)				11			
	1891.	Brown Dry Dock Co.:							
		Balance (1,200 tons)	220		62½	15			
	1892.	C. & D. McWilliams:	Balance (800 tons)	175		56	14		
			Sectional (300 tons)	100		47	11		
1891.	Geo. W. Rickard & Son:								
1891.	J. H. Fenner:	Balance (300 tons)	120			11			
		Marine Railway							
Hoboken, N. J.	1892.	Tietjen & Lang D. D. Co.:							
		Balance (2,000 tons)		236	69	18½			
	1891.	Willadsen & Johnson:	Balance (800 tons)		140	47	13½		
			Sectional (1,000 tons)	160		56	14		
	1891.	John McCarthy & Bro.:							
1891.	C. & D. McWilliams:								
Elizabethport, N. J.	1891.	New Jersey Dry Dock and Transportation Co.:							
		Balance (1,200 tons)							
Newburg, N. Y.	1892.	Manhattan Transp'n Co.:							
		Floating (small)							
Perth Amboy, N. J.	1891.	Marine Railway (1,000 tons) (T. S. Marvel & Co.)	500 (250 out water)	200 (cradle)	100 (slip)	F'd, 8; aft, 16.			
		Perth Amboy Dry Dock Co.:							
Wilmington, Del.	1892.	Floating, small							
		Simpson Dock, timber (Har- lan & Hollingsworth Co.)	340		{ 80 } { 45 }	14			
		Marine Railway (900 tons) (Pusey & Jones Co.)	400	195 (cradle)	35	5 (head)			
Chester, Penn.	1892.	Marine Railway (900 tons) (Jackson & Sharp Co.)	360 (160 out water)	200 (cradle)	60 (slip)	8			
		None							
League Island, Penn.	1892.	Government, Simpson, timber (U. S. Navy Yard.)	500		79	25½	6½	5½	
Philadelphia, Penn.	1892.	Wm. Cramp & Sons Ship and Engine Building Co.:							
		Simpson Dock, timber	400	390	{ 67 } { 48 }	20			
		Marine Railway (1,000 tons)	640	240 (cradle)	40	5 (head)			
	1892.	Chas. Hillman Ship and En- gine Building Co.:	Marine Railway	230 (out water)	170 (cradle)	40 (slip)	7 (head)		
			Marine Railway (800 tons)	220 (out water)	200 (cradle)	40	12		
1892.	Neafe & Levy Ship and En- gine Building Co.:								
		Marine Railway (1,000 tons)	220 (out water)	200 (cradle)	40	12			

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Smith, Theodore, & Bro. Vulcan Engine and Boiler Works (Brown & Miller).	1891.	Boilers only.				
	1891.	Engines and boilers.				
North River Iron Works (W. & A. Fletcher Co.)	1892.	Engines and boilers: large.	8 ins. diam., forged; large sizes turned.	Any size	None	60-ton floating derrick.
Ulster Steam Boiler Works (A. H. Rodie & Co.)	1892.	Boilers only.				
Crescent Shipyard and Iron Works (Sam'l L. Moore & Sons Co.)	1892.	Hulls and engines: large.			20 tons	
Marvel, T. S., & Co.	1892.	Hulls, engines, and boilers.	18 ins. diam., 24 ft. long, turned.	No facilities.	9 tons	26-ton shears.
Newburg Steam Boiler Works (P. Delany & Co.)	1892.	Boilers only.				
McCullough & Co.	1891.	Engines				
Ramsay, Hugh	1891.	Hulls only.				
Harlan & Hollingsworth Co.	1892.	Hulls, engines, and boilers: large.	8½ ins. diam., 20 ft. long, forged; any diam., 27 ft. long, turned.	Any size	22 tons	100-ton shears.
Pusey & Jones Co.	1892.	Hulls, engines, and boilers: large.	8 ins. diam., 20 ft. long, forged; any diam., 30 ft. long, turned.	20 ins.	22 tons	50-ton shears.
Delaware River Iron Ship Building and Engine Works.	1892.	Hulls, engines, and boilers: large.	10 ins. diam., forged; 40 ins. diam., 38 ft. long, turned.	Any size	18 tons	100-ton shears. This establishment and the Morgan Iron Works, New York, are under the same management.
U. S. Navy Yard	1892.	Large				
Baizley, John	1891.	Boilers				
Cramp, Wm., & Sons Ship and Engine Building Co.	1892.	Hulls, engines, and boilers: large.	19 ins. diam., 50 ft. long, forged and turned.	30 ins.	35 tons iron; 42 tons bronze.	120-ton floating derrick; 60-ton shears.
Ford Brothers	1891.	Copper smithing.				
Hillman, Chas. Ship and Engine Building Co.	1892.	Hulls and machinery.	Large sizes: turned; no forge.	No facilities.	None	150-ton shears.
Kensington Engine Works (Francis Bros.)	1892.	Engines and boilers.	16 ins. diam., 25 ft. long, turned.	10 ins.	4 tons	

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Philadelphia, Penn. (Continued.)	1892.	H. P. Kirkham & Son: Bow and Stern Dock						
Camden, N. J.	1887.	Floating, sectional..... (Carter, Roberts & Co.)	210		70	17		
	1891.	Camden Marine Railway (1,500 tons).	450	250 (cradle)				
Annapolis, Md.	1892.	None						
Baltimore, Md.	1892.	Columbian Iron Works and Dry Dock Co.:					1½	1
		Simpson, timber.....	505	437	{ 80 } { 45 }	20		
	1892.	Wm. E. Woodall & Co. Floating (2,000 tons)...	230		65	12		
	1891.	H. Brusstar & Bro.:						
		Floating, 2 sections . (700 tons)	154		60	10		
		Marine Railway (500 tons)		190 (cradle)	30	7		
	1891.	Abrahams Bros.:						
		Screw Dock, sectional	154		37	11		
	1892.	Thomas McCosker & Co.:						
		Floating (500 tons)		141	44½	13		
	1891.	Wm. Skinner & Sons:						
		Marine Railway (1,500 tons)		300 (cradle)		12		
		Marine Railway (800 tons)		200 (cradle)		7		
	1891.	Chas. W. Booz & Son:						
		Marine Railway (1,400 tons)		230 (cradle)	32	13		
	1891.	J. S. Beacham & Bro.:						
		Marine Railway (800 tons)		234 (cradle)		8		
	1891.	Chas. Reeder & Sons:						
		Marine Railway (500 tons)		200 (cradle)		7		
	1884.	Wm. H. Bixler & Co.:						
		Marine Railway (200 tons)		127 (cradle)	15	5		
	1891.	John C. Froehlich & Co.:						
		Marine Railway.....						
Alexandria, Va.	1892.	Marine Railway (1,000 tons).		210 (cradle)		7 (head)	3	2½
Washington, D. C.	1892.	Marine Railway (700 tons).. (U. S. Navy Yard.)	475	224 (cradle)	21 (cradle)	7 (head)	3	2½

following North Atlantic Station Ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Penn Works (Neafie & Levy Ship and Engine Building Co.)	1892.	Hulls, engines, and boilers; large.	14 ins. diam., 40 ft. long, turned; no forge.	.....	30 tons...	90-ton sheers.
Port Richmond Iron Works (I. P. Morris Co.)	1892.	Engines and boilers; large.	Any diam., 32 ft. long, turned.	Any size...	35 tons...	50-ton sheers.
Southwark Foundry and Machine Co.	1892.	Engines and boilers; large.	No facilities for forging.	No facilities.	40 tons...	
Cooper's Point Iron Works.	1891.	Ordinary repairs.	.....	.....	.....
Dialogue, John H., & Son.	1891.	Hulls and machinery; large.	15 ins. diam., 30 ft. long, forged; any diam., 43 ft. long, turned.	.....	.....	60-ton sheers.
Morris & Mathis	1891.	Ordinary repairs.	.....	.....	.....
U. S. Naval Academy machine shop.	1892.	Small	.....	.....	.....	Naval Academy shop is for instruction; could only be called upon in case of necessity.
Columbian Iron Works and Dry Dock Co.	1892.	Hulls, engines, and boilers; large.	7 ins. diam., 30 ft. long, forged; any diam., 40 ft. long, turned.	Any size...	Have cast 20-ton cylinders.	Sheers at wharf, 50 tons; 105 ft. high, 32 ft. overhang. Dry Dock is free to U. S. naval vessels.
Campbell & Zell Co. (Enterprise Marine Engine and Boiler Works).	1892.	Hulls, engines, and boilers; small.	.....	.....	.....
Clark, Jas., & Co. (People's Machine and Boiler Works).	1891.	Hulls, engines, and boilers; large.	Any diam., 36 ft. long, turned.	.....	.....	60-ton sheers.
Codd, E. J., & Co.	1891.	Machinery.	.....	.....	.....
Coleman, John T.	1891.	Boilers only.	.....	.....	.....
Froehlich, John C., & Co.	1891.	Machinery.	.....	.....	.....
Maryland Steel Co. (Sparrow's Point).	1892.	Hulls, engines, and boilers; large.	16 ins. diam., 27 ft. long, turned; no facilities for heavy forging.	Any usual size.	60 tons...	125-ton sheers, with 100 ft. lift.
Reeder, Chas., & Sons.	1891.	Hulls, engines, and boilers; large.	Any diam., 30 ft. long, turned.	Any size...	15 tons...	50-ton sheers.
Spedden, R. M., & Co.	1891.	Machinery.	.....	.....	.....
Woodall, Wm. E., & Co.	1892.	Wood and composite hulls only.	.....	.....	.....
	1892.		.....	.....	.....	Facilities for minor repairs.
U. S. Navy Yard	1892.	Indifferent facilities, except for ordnance work.	.....	.....	.....	U. S. S. Enterprise has been taken out on marine railway. Facilities for minor repairs at machine shops in city.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W., ordin- ary springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Newport News, Va.	1892.	Simpson Dock, timber (Newport News Shipbuild- ing and Dry Dock Co.)	600	565	{ 92 } { 51 }	26	2½	2½
Norfolk, Va.	1892.	Norfolk Navy Yard: Granite..	320		60	25	3	2½
		Simpson.	500		79	25½		
	1891.	Marine Railway (800 tons) (W. A. Graves.)		190 (cradle)		8		
	1891.	Marine Railway (1,500 tons) (J. L. Thomas, Berkley.)		225 (cradle)		9½		
Wilmington, N. C.	1892.	Marine Railway (700 tons) (S. W. Skinner & Co.)	350 (150 out water)	175 (cradle)	42	8½; 13.	2½	2½
Charleston, S. C.	1891.	Pregнал Bros: Floating Dock (700 tons) Marine Railway (800 tons)	150 200		48	11		
Port Royal, S. C.	1892.	U. S. Government, timber (Under construction.)	496		80½	26	6½	6½
Savannah, Ga.	1891.	Marine Railway (1,150 tons) (H. F. Willink.)		250 (cradle)	48	10	6½	6½
Jacksonville, Fla.	1892.	Jacksonville Marine Ry. Co. (Drew & Hazeltine): Marine Railway, No. 1 (1,200 tons) Marine Railway, No. 2 (300 tons)	600 350	200 (cradle) 140 (cradle)		10½ 7½	1	½
Key West, Fla.	1892.	Bow and Stern Dock (U. S. Government)						
Pensacola, Fla.	1892.	Floating, sectional, iron (U. S. Navy Yard.)	153		72			
	1892.	Floating, sectional, wood, 600 tons. (Located 30 miles up river; Ollinger & Bruce.)	165		46	10		
	1892.	Marine Railway (1,600 tons) (Pensacola Marine Railway Co., Bullwainville.)		190 (cradle)		F'd, 12; aft, 20.		
Mobile, Ala.	1892.	Home Industry Iron Works: Dry Dock, excavated Floating, 5 sections (600 tons) Marine Railway, under construction (1,500 tons) Marine Railway (420 tons)	300 225 600 310	 265 (cradle) 145 (cradle)	40 40 (slip) 40 (slip)	15 (blocks) 8½ aft, 25. F'd, 3; aft, 23.	1 to 2 (irregular)	
	1892.	R. Moore & Co.: Marine Railway (500 tons) (Broadside type.)	360	120 (seven 15-ft. cradles)		7		

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Newport News Shipbuilding and Dry Dock Co.	1892.	Hulls, engines, and boilers; large.	15 ins. diam., forged; any diam., turned.	Any size ...	None.....	100-ton derrick.
U. S. Navy Yard ... Atlantic Iron Works.	1892.	Large ...	.....	.....	.....	65-ton sheers at navy yard; granite dock will take vessels 290 ft. long; Simpson dock, vessels 452 ft. long.
Elizabeth Iron Works (Chas. W. Pettit).	1891.	Machinery, small.	.....	.....	.....
Virginia Iron Works (Thos. W. Godwin & Co.)	1892.	Engines and boilers; moderate.	6 ins. diam., forged.	No facilities.	3,500 lbs..	
	1892.	Engines and boilers; large.	7 ins. diam., 20 ft. long, forged; 16 ins. diam., 25 ft. long, turned.	16 ins	4½ tons ...	
S. W. Skinner & Co..	1892.	Ordinary repairs.	7 ins. diam., 26 ft. long.	8 ins	3,000 lbs..	
Charleston Iron Works (Hughes & Chisolm).	1892.	Engines and boilers; ordinary repairs.	6 ins. diam., welded; 12 ins. diam., 18 ft. long, turned.	No facilities.	8 tons ...	50-ton sheers at Preg-nall Bros.' shipyard.
Valk & Murdoch Iron Works.	1892.	Engines and boilers; ordinary repairs.	6 ins. diam., forged; 10 ins. diam., turned.	8 ins	5½ tons ...	
None	1891.	.....	.....	.....	.....	U. S. Navy Yard to be established here.
Novelty Iron Works (John Rourke).	1891.	Engines and boilers.	.....	.....	.....
Tynan, J. W.	1891.	Engines and boilers.	.....	.....	.....
Merrill-Stevens Engineering Co.	1892.	Small, to hulls; moderate, to engines and boilers.	8 ins. diam., 20 ft. long, forged and turned.	No facilities; pipes of 15 ins. diam. brazed in city.	None; but can obtain castings of 4,000 lbs. in city.	50-ton steam sheers, 80 feet high.
U. S. Naval Station ..	1892.	Small .....	.....	.....	.....
U. S. Navy Yard ...	1892.	Small .....	.....	.....	.....	Government Dock unfinished, not in use; design called for six sections, with total length of 250 ft., and lifting power of 3,000 tons; work suspended after delivery of four sections.
Gibney Iron Works .	1891.	Boilers only.	.....	.....	.....
Home Industry Iron Works.	1892.	Engines and boilers; large.	24 ins. diam., 40 ft. long, turned; no facilities for forging shafts.	18 ins	7 tons....	

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made	Remarks.
Johnson Iron Works	1892.	Engines and boilers; large.	10 ins. diam., welded; 15 ins. diam., 24 ft. long, turned.	No facilities.	500 lbs., brass.	The floating docks are all located in the 5th district of New Orleans (Algiers).
Leeds & Co	1892.	Engines and boilers; large.	Large sizes turned; no heavy forging.	No facilities.	50 tons...	
Mims, A. A.	1891.	Engines and boilers; large.	11 ins. diam., 25 ft. long, turned.	14 ins.	3 tons....	
Shakespeare Iron Works (Shakespeare, Smith & Co.)	1892.	Engines; large.	Large sizes turned; no heavy forging.	Any size....	10 tons...	
Whitney Iron Works	1892.	Engines and boilers; large.	Any diam., 33 ft. long, turned; no heavy forging.	No facilities.	27 tons...	
Lee Iron Works.....	1892.	Engines and boilers; all ordinary repairs.	7 ins. diam., welded; 20 ft. long, turned.	Any ordinary size.	3½ tons...	
None	1883.					
	1883.					Facilities for small repairs at railroad shop.
	1884.					Facilities for ordinary repairs at railroad shops.
None	1885.					
	1883.					One large machine shop.
None	1884.					
Nicaragua Canal Construction Co.	1890.	Machinery repairs.				
	1883.					Good shops belonging to railroad company.

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1883.					Railroad shops; small forge.
	1891.					Railroad shops; facilities for minor repairs.
Colombian Government shops.	1891.	Machinery repairs; small.				
None	1885.					
	1889.					Minor repairs to Magdalena River steamers effected here.
None	1884.					
None	1883.					
None	1884.					
None	1887.					
	1891.					One small machine shop with facilities for minor repairs.
	1891.					Repair shops at La Guayra for small work; R. R. machine shops at Caracas.
None	1890.					
	1884.					
None	1884.					
	1883.					One small machine shop.
H. B. M. Dockyard	1889.	Large	10 ins. diam. forged and turned.	Any size	2 tons	50-ton shears, with 20 feet alongside at L. W.
None	1890.					
None	1883.					
None	1884.					

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Cardenas, Cuba.	1884.	None						
Matanzas, Cuba.	1890.	None						
Havana, Cuba.	1891.	Progreso Cubano, floating (2,800 tons)	300		80	16		
	1891.	Marine Ways (500 tons) (Govt. Arsenal)						
Cienfuegos, Cuba.	1891.	Patent Slip (1,200 tons) (José Posada)		212 (cradle)		12		
Trinidad, Cuba.	1883.	None						
Santiago, Cuba.	1891.	None						
Port Antonio, Jamaica.	1891.	None						
Port Morant, Jamaica.	1891.	None						
Port Royal, Jamaica.	1891.	None						
Kingston, Jamaica.	1891.	None						
Port-au-Prince, Hayti.	1884.	Marine Ways, small (Fort Liberto)						
Gonaives, Hayti.	1891.	None						
Mole St. Nicolas, Hayti.	1891.	None						
Cape Haytien, Hayti.	1891.	None						
Puerto Plata, San Domingo.	1891.	None						
Samana, San Domingo.	1891.	None						
San Domingo, San Domingo.	1891.	None						
Ponce, Porto Rico.	1891.	None						
Mayaguez, Porto Rico.	1891.	None						
San Juan, Porto Rico.	1891.	None						

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
.....	1884.	.....	.....	.....	.....	One machine shop.
None	1884.	.....	.....	.....	.....	.....
Spanish Govt. Dockyard and Arsenal, Van Fewatez & Co.	1890.	Ordinary repairs.	.....	.....	.....	120-ton sheers at custom-house wharf.
.....	1887.	Castings and forging.	.....	.....	Have cast a 7-ton screw.	.....
Zuleta y Sabrino (Casa Blanca.)	1888.	To hulls, moderate; to machinery, large.	30 ins. diam., 20 ft. long; turned; no heavy forging.	Any size.	4½ tons.	20-ton sheers.
.....	1888.	.....	.....	.....	.....	Two mechanical establishments, affording facilities for repairs to hulls and machinery.
.....	1883.	.....	.....	.....	.....	One machine shop.
.....	1884.	.....	.....	.....	.....	Two mechanical establishments, affording facilities for all ordinary repairs.
None	1891.	.....	.....	.....	.....	.....
H. B. M. Dockyard	1889.	Small	.....	6 ins.	1 ton	.....
Lasarns, Chas. P., & Co. (West End Foundry).	1884.	To engines and boilers; small.	5 ins. diam., welded.	.....	1 ton	The best facilities at Kingston for machinery repairs are afforded by the railway shops (1890).
Lewis, W. H.	1884.	Machinery small.	.....	.....	.....	.....
None	1884.	.....	.....	.....	.....	The ways at Fort Liberté are used to haul up the small Haytian coasting steamers.
None	1889.	.....	.....	.....	.....	.....
None	1884.	.....	.....	.....	.....	.....
None	1884.	.....	.....	.....	.....	.....
None	1883.	.....	.....	.....	.....	.....
None	1883.	.....	.....	.....	.....	.....
None	1886.	.....	.....	.....	.....	.....
Sobrinos de Portillo.	1890.	Machinery small.	.....	.....	.....	.....
Vienda de Abarco	1890.	Machinery small.	.....	.....	.....	.....

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
St. Thomas, D. W. I.	1891.	Floating, iron (3,000 tons)....	250	250	70	21	.....	.....
	1891.	Patent Slip (500 tons).....	Can be length- ened by pon- toons to 280.		30	.....	.....	.....
Fredericksted, Santa Cruz, D. W. I.	1891.	None		165 (cradle)				
Christiansted, Santa Cruz, D. W. I.	1891.	None						
Basseterre, St. Christopher, B. W. I.	1891.	None						
St. John's, Antigua, B. W. I.	1891.	None						
English Harbor, Antigua, B. W. I.	1891.	None						
Pointe à-Pitre, Guadeloupe, F. W. I.	1891.	None						
Portsmouth, Dominica, B. W. I.	1891.	None						
Roseau, Dominica, B. W. I.	1891.	None						
St. Pierre, Martinique, F. W. I.	1883.	None						
Fort-de-France, Martinique, F. W. I.	1891.	French Government, stone...	418	361	85½	28	.....	.....
Port Castries, St. Lucia, B. W. I.	1891.	None						
Kingstown, St. Vincent, B. W. I.	1891.	None						
Bridgetown, Barbadoes, B. W. I.	1891.	Careening Pits Screw Dock (1,200 tons); unfinished (John Blackwood).	280		50		.....	.....
St. George, Grenada, B. W. I.	1891.	None						

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Floating Dock Co.	1887.	All ordinary repairs.	.....	.....	.....	The floating dock has taken a vessel 320 feet long, of 288 feet keel. 40-ton crane on dock.
Royal Mail Steam Packet Co.	1887.	All ordinary repairs.	5 ins. diam., forged; 25 ft. long, turned.	Any size.	500 lbs. brass.	
None.	1885.	.....	.....	.....	.....
Estates Machinery Repairing Shop. (C. H. Boon & Co.)	1884.	Small. . . . .	.....	.....	.....	The British naval dockyard has been stripped of all machinery fit for use elsewhere; buildings in charge of a care-taker.
Derr & Co.	1891.	Machinery: small.	10 ft. long, turned.	.....	.....
None.	1891.	.....	.....	.....	.....
French Government (Fouillole Point). Compagnie Générale Transatlantique. Usine d'Arboussier (E. Souques & Cie.)	1884. 1888. 1888.	Small. Small. Engines and boilers: ordinary repairs.	..... ..... .....	..... ..... .....	..... ..... .....	60-ton crane at wharf.
Clement, H., & Co.	1887.	Machinery: large.	No heavy forging.	Any size.	2½ tons.	
Compagnie Générale Transatlantique.	1887. 1891. 1891.	Ordinary repairs.	12 ins. diam., 17½ ft. long, turned.	8 ins.	None.	Dock will take a vessel 400 feet long.
None.	1891.	.....	.....	.....	.....	Facilities for small repairs at Improvement Co.'s shops, near coal docks.
Simpson, D. M., & Co. (Trafalgar Works).	1888.	Machinery: all ordinary repairs.	Large sizes turned; no heavy forging.	.....	5 cwt.	Dock to be finished by Dec., 1892.

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Port of Spain, Trinidad, B. W. I.	1891.	Patent Slip (400 tons) (Turnbull, Stewart, & Co.)		185 (cradle)				
Georgetown, Demerara, British Guiana.	1887.	Sproston Dock, stone..... (Sproston Dock and Foundry Co.)	230	200	45	10	9	6
Paramaribo, Dutch Guiana.	1891.	None.....						
Cayenne, French Guiana.	1891.	None.....						
Para, Brazil.	1891.	Patent Slip, steel (400 tons) .. (Kingdom & Co.)	250	133 (cradle)		F'd 6; aft, 8½	11	8
	1891.	Gridiron (500 tons) (Kingdom & Co.)	150			6		
	1891.	Gridiron (500 tons) (Amazon Co.)	150			6		
	1891.	Gridiron (400 tons) (Hammond & Co.)	200			6		
	1891.	Gridiron (400 tons) (Boulhosa & Co.)	150			6		

Particulars of docking and repairing facilities

Maranham, Brazil.	1884.	Gridiron (500 tons) (Companhia a Navegação a Vapor.)				12	16½	10½
Ceara, Brazil.	1891.	None.....						
Pernambuco, Brazil.	1891.	None.....						
Bahia, Brazil.	1891.	Patent Slip (small).....						
Rio de Janeiro, Brazil.	1890.	Government (Cobras Island): Imperial	423	392	70	24		
		Santa Cruz	258½	240	54½	20		
	1891.	Saude Point Dry Dock (Brazil Dry Dock and Engineering Works).	520	487	70	25		
		(See Remarks)						
	1891.	Comercio (Mocangué Island) (Wilson & Co.)	405		45	18		
	1891.	Three Patent Slips, small						
	1891.	Dry Dock, under construction (Lage Bros.)						

following North Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Wishart, James	1884.	Machinery; small.	4 ins. diam., forged; 20 ft. long, turned.		300 lbs.	Facilities for small repairs are afforded at the railroad shops.
Sproston Dock and Foundry Co.	1887.	Repairs of all kinds.	6 ins. diam., 15 ft. long, forged and turned.	Any size.	5 tons.	15-ton derrick.
Buchanan, Robt., & Co.	1887.	Machinery; all ordinary repairs.	7 ins. diam., forged; turned one weighing 12 tons.	14 ins.	4½ tons.	
Netherlands Govt. machine shop.	1885.	Ordinary repairs.				
	1883.					Facilities for minor repairs.
	1883.					Extensive and excellent facilities for all ordinary repairs.

of the following South Atlantic Station ports.

Companhia a Navegação a Vapor. Companhia Auxiliador Agrícola.	1884.	Ordinary repairs.				
	1884.	Machinery; small.				
	1889.					Facilities for minor repairs to machinery at the railroad shops.
Brazilian Government Dockyard. Bowman & Co.	1889.	Small.				
	1887.	Machinery; all ordinary repairs.	9 ins. diam., 20 ft. long.			
Brazilian Government Dockyard. Cia. Metropolitana da Bahia (Cox Bros.)	1891.	Small.				Companhia Bahiana have shops for the repair of their own steamers.
	1891.	Machinery; all ordinary repairs.	11 ft. long, turned.		3 tons.	
Brazilian Government Dockyard.	1890.	Large, of all kinds.	12 ins. diam., forged; any diam., 40 ft. long, turned.			90-ton sheers and 60-ton floating derrick at dockyard. Gov't dry docks are cut in the solid rock.
Brazil Dry Dock and Engin'g Works (Companhia Lloyd Brasileiro).	1891.	Large, of all kinds.	12 ins. diam., forged.			Saude Point Dock is available for vessels 470 feet long.
Wilson & Co., Mucangué Dry Dock.	1889.	Ordinary repairs.				

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Santos, Brazil.	1891.	None						
Desterro, St. Catherine's Id., Brazil.	1891.	None						
Rio Grande do Sul, Brazil.	1891.	Patent Slip (300 tons)	600	200 (cradle)		10	1½	
Maldonado, Uruguay.	1891.	None						
Montevideo, Uruguay.	1892.	Cerro Dry Dock	450		{ 55 } { 40 }	17 (15 to 16, ap- proach)	No regular tides; water varies with winds.	
	1892.	Mafia Dry Dock	262	232	52	13		
Colonia, Uruguay.	1884.	Patent Slip (450 tons)				9		
Fray Bentos, Uruguay.	1891.	None						
Paysandu, Uruguay.	1892.	Small Ways (suitable for steam-launches, etc.)						
San Pedro, Argentina.	1891.	None						
San Nicolas, Argentina.	1891.	None						
Rosario, Argentina.	1892.	None						
Santa Elena, Argentina.	1891.	None						
La Paz, Argentina.	1891.	None						
Corrientes, Argentina.	1891.	None						
Asuncion, Paraguay.	1889.	None						
Zarate, Argentina.	1888.	None						
San Fernando, Argentina.	1891.	Dry Dock	300		5½	11		
		(Kay & Co.)						

following South Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None	1886.					
None	1885.					
None	1891.					
Harley, William	1891.	Ordinary repairs.	12 ins. diam., 18 ft. long, forged and turned.	No facilities.	15 tons	Cerro Dock can be divided into two sections: outer, 255 feet long; inner, 195.
Montevideo Gas Co. (Maña Dry Dock).	1891.	Ordinary repairs.	No facilities for shafts.	10 ins	None	Maña dock is cut in the solid rock; sides vertical; entrance much exposed; 30-ton sheers.
None	1885.					
	1889.					Facilities for minor repairs to machinery are afforded by shops of Liebig's Meat Extract Co.
	1892.					Facilities for small machine work and light composition castings.
None	1888.					
Geddes, C	1887.	Hulls only; small.				Facilities for small machine work at Electric Lighting Co.'s shops, 1888.
Bischoff, Geo	1892.	Machinery; small.				Railway Co.'s works afford facilities for repairs to engines.
Fundicion del Rosario.	1892.	Machinery; large.				
Righetti, Santiago	1892.	Machinery; large.				
	1889.					Facilities for minor repairs at the railroad shops.
Zarate Naval Arsenal (Argentine Government).	1889.	Small.				Messrs. Standfield & Clark, of London, were reported May, 1889, as engaged upon the construction of a depositing dock of 5,000 tons capacity, to be located here.
Tigre Navy Yard (Argentine Govt.)	1892.	Machinery; ordinary repairs.			1 ton	Dockyard is about 5 miles from San Fernando.

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Buenos Ayres, Argentina.	1891.	Patent Slip (100 tons) (Platense Flotilla Co.)	180					
Ensenada, Argentina.	1891.	None						
Bahia Blanca, Argentina.	1891.	None						
Port Stanley, Falkland Ids.	1891.	None						
Ascension Island.	1890.	None						
Jamestown, St. Helena.	1891.	None						
St. Paul de Loanda, West Africa.	1890.	None						
Cape Town, Cape Colony.	1890.	Robinson Dock (double) (Alfred Docks.)	529 $\frac{1}{2}$	500 Increased by 12 $\frac{1}{2}$ ft. with cal- son on stop.	68	26 (sill); 23 $\frac{1}{2}$ (head).	5	3 $\frac{1}{2}$
	1890.	Patent Slip (1,000 tons) (Alfred Docks.)	860	245 (cradle)	63 (slip); 50 (cradle)	22		
Simon's Town, Cape Colony.	1891.	Patent Slip (1,000 tons) (H. B. M. Dockyard.)	700	250 (cradle)	66 (slip)	14	5 $\frac{1}{2}$	3 $\frac{1}{2}$
Mossel Bay, Cape Colony.	1891.	None						
Port Elizabeth, Cape Colony.	1891.	None						
East London, Cape Colony.	1890.	Government Patent Slip (unfinished).	900					
	1891.	Kafrarian Steam Landing and Shipping Co.: Pontoon, No. 1 Slip	140					
	1891.	Pontoon, No. 2 Slip	160					
	1891.	East London L. and S. Co.: Slip	145					

following South Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Platense Flotilla Co.	1891.	General repairs.	No heavy forging.	Any usual size.	4 tons...	
Fader & Peña.....	1884.	Hulls and machinery.	17 ft. long; turned.		16 tons...	
Ortelli, Estevan.....	1884.	Machinery; small.			None	
Schwartz, Felipe.....	1884.	Machinery; large.	10 ins. diam. 26 ft. long; forged and turned.		8 tons	
De Baltasar, Anganuzzi, y Cia. (La Plata).	1891.	Machinery; all ordinary repairs.			6 tons	There are, in addition, several other machine shops at La Plata, and one at Ensenada.
None.....	1884.					
Falkland Islands Co.	1888.	Slight repairs.				
British Govt. shops.	1890.	Machinery; small.		6 ins.	240 lbs.	Facilities excellent for minor repairs; artificers must be supplied by ship.
None.....	1890.					
Portuguese Govt. shops.	1889.	Machinery; small.				
Table Bay Harbor Board (Alfred Docks).	1887.	Machinery; large.	18 ins. diam., 40 ft. long; turned; no heavy forging.	18 ins.	None	
Cunningham & Gearing, Klug, V.....	1887.	All ordinary repairs.	8 ins. diam.	14 ins.	1½ tons...	
Phoenix Foundry.....	1887.	Machinery; small.	6 ins. diam. 22 ft. long.		1½ tons...	
Short, T., & Co.....	1887.	Machinery; ordinary repairs.	6 ins. diam.	18 ins.	2½ tons...	
Colonial Railway Shops (Salt River).	1887.	Machinery; large.	14 ins. diam., 18 ft. long; turned; no heavy forging.	8 ins.	8 tons...	
H. B. M. Dockyard.....	1889.	All ordinary repairs.	10 ins. diam.	Any size.	5 tons...	
None.....	1883.					
Howard, Farrar & Co.	1886.	Machinery; small.	6 ins. diam., 16 ft. long.	6 ins.	1½ tons...	Facilities for ordinary machine work are afforded at the railway shops.
Mangold Bros.....	1886.	Machinery; ordinary repairs.	8 ins. diam., 14 ft. long.	12 ins.	1½ tons...	
Eastern System Colonial Railway Shops.	1886.	Machinery; large.	23 ins. diam., 17 ft. long; turned.	24 ins.	1½ tons...	Patent slip in use for small vessels, 1889, although not completed to full dimensions.

Particulars of docking and repairing facilities of the

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Durbaz, Natal, South Africa.	1891.	Patent Slip (500 tons) (Government.)	485	165 (cradle)				
Lorenzo Marquez, Delagoa Bay, South Africa.	1891.	None						
Mozambique, Mozambique.	1891.	None						
Zanzibar, East Africa.	1891.	None						
Johanna, Comoro Ids.	1887.	None						
Mayotte, Comoro Ids.	1885.	None						
Helleville, Nossi Bé, Madagascar.	1886.	None						
Tamatave, Madagascar.	1891.	None in Madagascar						
St. Denis, and Pointe des Galets, Réunion.	1888.	Patent Slip (projected, in con- nection with the harbor improvements at Pointe des Galets).						
St. Pierre, Réunion.	1890.	Dry Dock	308		33	14½	3½	
Port Louis, Mauritius.	1891.	Dry Dock and Slips Co. : Stevenson Dock	384		60	19	3	2
		Albion Dock	326		60	19		
		Hay Dock	324		46	13		
		Patent Slip (for vessels of 400 tons register). Patent Slip (for vessels of 60 tons register).		143 (cradle) 106 (cradle)	37 36			
Mahé, Seychelles Ids.	1891.	None						

following South Atlantic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Natal Harbor Board	1886.	Hulls and engines; small.	20 ins. diam., 8 ft. long, turned.	No facilities.	None	Shops for repair of floating plant employed in the harbor improvements.
Natal Railway Shops	1886.	Machinery; small.	No heavy forging.	Moderate size	1 ton.....	Chiefly employed on locomotive work; plant to be enlarged.
Umgeni Engine Works.	1886.	Machinery; large.	12 ins. diam., 15 ft. long.	15 ins.....	10 tons...	Lathe ordered for turning shafts of largest size.
None	1891.					
None	1889.					There is a small establishment belonging to the Portuguese Government, but no repairs of consequence can be undertaken.
None	1887.					
None	1887.					
	1884.					Some facilities for small repairs at French Government depot.
None	1886.					
	1889.					One shop for small work; two small lathes and four forges.
	1890.					Facilities for large repairs to machinery, at Pointe des Galets.
	1890.					Facilities for ordinary repairs; dock will take a vessel 246 feet long.
Dry Dock and Slips Co.	1891.	Ordinary repairs to hulls and machinery.				25-ton crane at Hay dock.
Foreign and Foundries Co.	1887.	Large, to machinery.			6 tons, iron; 2½ tons, brass.	Shops 1 mile distant; specialty, machinery for sugar works.
Tardieu, M., & Co...	1887.	Small, to machinery.			None	
Government Railway Shops (Plaines Luzan).	1887.	Ordinary repairs to machinery.				2 miles distant.
None	1884.					

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Sitka, Alaska.	1891.	None						
Nanaimo, Vancouver Id., B. C.	1891.	None						
Vancouver, B. C.		.....					
Victoria, Vancouver Id., B. C.	1891. 1891.	Marine Railway (700 tons) Two Marine Railways (each 300 tons).						
Esquimalt, Vancouver Id., B. C.	1891.	Government, stone	451 (Can be length- ened to 480 by shifting caisson to outer stop.)	430	{ 65 } { 58 }	26½	7 to 10 (diurnal inequality)	5 to 8
Port Townsend, Wash.	1891.	Marine Railway						
	1892.	(Point Hudson). Floating, under construction. (Puget Sd. Eng'g Wks.)	375		90	28		
Seattle, Wash.	1891.	Marine Railway (2,000 tons), under construction. (Seattle Dry Dock and Shipbuilding Co.)	600 (200 out water)	200 (cradle)	90 (slip)	12	12	10½
Point Turner, Port Orchard, Wash.	1892.	U. S. Government, timber.... (to be built).	605½		92½	30	10½	9
Tacoma, Wash.	1892.	Floating, balance, wood, Quartermaster Harbor. (Puget Sound D. D. Co.)	325	325	80	25		
Olympia, Wash.	1889.	None						
Astoria, Oregon.		.....					
Portland, and Albina, Oregon.	1892.	Albina Dry Dock	400		{ 72 } { 42 }	18½ (at ordin'y stages of the river.)		

of the following Pacific Station ports.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes; diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None	1891.	.....	.....	.....	.....	.....
None	1885.	.....	.....	.....	.....	.....
British Columbia Iron Works.	1891.	Machinery; ordinary repairs.	.....	.....	.....	.....
Albion Iron Works.	1891.	Machinery repairs; large.	5 ins. diam., 30 ft. long. forged; 10 ins. diam., 20 ft. long. turned.	No facilities.	8 tons...	Facilities no longer first-class; machinery old and much worn.
H. B. M. Dockyard..	1891.	Small.....	.....	6 ins.....	2 tons.....	Owing to limited number of mechanics at dockyard, work in shops is usually done by artificers from ships. For the repairs to H. M. S. Warspite in 1891, workmen were sent out from England.
Puget Sound Engineering Works.	1892.	Engines and boilers; all ordinary repairs.	12 ins. diam., 16½ ft. long. turned.	12 ins.....	3 tons.....	There are machine shops at both Irondale and Haddock, on Port Townsend Bay.
Moran Bros. Co.....	1892.	Engines and boilers; ordinary repairs.	20 ft. long. turned; no forge.	No facilities.	8 tons.....	.....
Queen City Boiler Works.	1887.	Boilers only.	.....	.....	.....	.....
Seattle Boiler Works.	1887.	Boilers only.	.....	.....	.....	.....
Washington Iron Works.	1892.	Engines and boilers; ordinary repairs.	7 ins. diam., 23 ft. long. forged; 12 ins. diam., 23 ft. long. turned.	No facilities.	25 tons...	.....
U. S. Navy Yard, to be established.	1892.	.....	.....	.....	.....	.....
N'n Pacific R. R. Machine Shops.	1892.	Machinery; large.	.....	.....	.....	.....
Puget Sound Dry Dock Co.	1892.	All ordinary repairs.	10 ins. diam., 20 ft. long. forged; 16 ins. diam., 20 ft. long. turned.	12 ins.....	7 tons.....	.....
None	1889.	.....	.....	.....	.....	.....
Union Iron Works..	1892.	Engines; ordinary repairs.	18 ins. diam., 24 ft. long. turned.	No facilities.	4½ tons...	There is a small dock for river steamers 165 by 35 by 6, at Oregon City, 16 miles from Portland, up the river, beyond head of ship navigation.
Willamette Iron Works.	1892.	Engines and boilers; large.	20 ins. diam., 20 ft. long. forged and turned.	Any size....	17 tons...	.....

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W. ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Coos Bay, Oregon.	1889.	None.....						
San Francisco, Cal.	1891.	California Dry Dock Co.: Stone (Hunter's Point) ..	482½	.....	{ 90) { 60)	23	4½	3½
	1892.	Union Iron Works: Hydraulic Lift, steel.... (4,750 tons)	440	.....	63	19½		
	1891.	Merchants' Dry Dock Co.: Floating docks, wood—						
		No. 1 (1,500 tons)	210	210	64	15		
		No. 2 (500 tons)	150	150	44	10		
	Marine Railway		187	50	F'd, 11;			
	(1,000 tons)		(cradle)		aft, 16;			
1839.	Marine Railway (400 tons) ..		150	40	7			
			(cradle)		(head)			
Marine Island, Cal.	1892.	U. S. Navy Yard: Dry Dock, granite. Sectional, wood ... (5,000 tons)	529½	.....	78	27½	5½	5
			350	.....	92	16		
San Pedro, Cal.	1885.	None.....						
San Diego, Cal.	1888.	Marine Railway (2,500 tons)	850 (250 out water)	250 (cradle)	30 (cradle)	25	5	3½

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
La Paz, and Pichilique Bay, Mexico.	1891.	None						
Guaymas, Mexico.	1887.	None						
Altata, Mexico.	1883.	None						
Mazatlan, Mexico.	1891.	None						
San Blas, Mexico.	1891.	None						
Acapulco, Mexico.	1891.	None						
San José, Guatemala.	1887.	None						
Acajutla, San Salvador.	1891.	None						
La Libertad, San Salvador.	1891.	None						
La Union, San Salvador.	1891.	None						
Amapala, Honduras.	1891.	None						
Corinto, Nicaragua.	1891.	None						
Punta Arenas, Costa Rica.	1883.	None						
Panama, Colombia.	1884.	Gridiron, small (P. S. N. Co., Taboga Id.)						
Buenaventura, Colombia.	1884.	None						
Guayaquil, Ecuador.	1891.	None						
Payta, Peru.	1891.	None						
Eten, Peru.	1886.	None						
Pacasmayo, Peru.	1885.	None						
Salaverry, Peru.	1891.	None						

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None.....	1891.					
Sonora Railway Co ..	1887.	Machinery; small.				
None.....	1883.					R. R. machine shops at Culiacan, 33 miles distant.
Lambeth & Cie	1891.	All ordinary repairs.	6 ins. diam., 12 ft. long, forged and turned.		4 tons....	Besides this establishment there is a boiler shop with facilities for ordinary repairs.
None.....	1883.					
Pacific Mail S. S. Co.	1891.	To hulls and machinery; small.				
None.....	1887.					R. R. machine shop at Guatemala City, 75 miles distant by rail; lathe to take work 10 ft. long; 5-ton steam-hammer; also boiler shop.
None.....	1886.					
None.....	1890.					
None.....	1890.					Facilities for light machinery repairs at Amelia, 7 miles distant by rail; steam hammer at Managua.
None.....	1883.					
Pacific Mail S. S. Co. (Flamenco).	1888.					No docking facilities at Panama, 1891, except for small craft.
Pacific Steam Nav'n Co. (Taboga).	1886.	Small	Very small.	20 ins.		
Panama R. R. Co....	1888.	Small	Very small.	20 ins.		
None.....	1884.					
	1883.					Two small machine shops.
None.....	1891.					
	1883.					Facilities for light repairs.
None.....	1885.					

Particulars of docking and repairing facilities of

Name of port.	Date:	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Chimbote, Peru.	1885.	None						
Callao, Peru.	1891.	St. George Floating, iron (5,000 tons)		300	76	21		
Mollendo, Peru.	1891.	None						
Arica, Chile.	1891.	None						
Pisagua, Chile.	1884.	None						
Iquique, Chile.	1891.	None						
Antofagasta, Chile.	1891.	None						
Taltal, Chile.	1891.	None						
Caldera, Chile.	1891.	None						
Carrizal Bajo, Chile.	1891.	None						
Coquimbo, Chile.	1891.	None						
Valparaiso, Chile.	1892.	Santiago Floating, wood.... (6,000 tons)	300		68; 49 $\frac{1}{2}$, at 11 ft. above blocks.	19		
	1892.	Valparaiso Floating, wood .. (2,500 tons)	265		60; 56, at 12 ft. above blocks.	15		

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
-----	1884.	-----	-----	-----	-----	Facilities for small machinery repairs at the R. R. shops.
Chucinto Foundry (S. D. Cook).	1887.	All ordinary repairs to machinery.	5 ins. diam., 21 ft. long, turned.	No facilities.	2 tons....	Dock has taken a vessel 380 ft. long; for vessels less than 300 ft. long, there is a gate, for protection against swell whilst docking.
Heaton, Cree & Kerr.	1887.	All ordinary repairs to machinery.	Turn 24 ft. long; any diam., to 8 tons wt.	24 ins.....	5 tons....	35-ton sheers at mole. In addition to the mechanical establishments enumerated, there are works on San Lorenzo Island affording facilities for minor repairs.
Pacific Steam Nav'n Co.	1887.	Large, of all kinds.	13 ins. diam., 25 ft. long, turned; no heavy forging; large shafts kept in stock.	15 ins., steam; 20 ins., water.	10 tons...	
Victoria Iron Works (Stuart & Swallow).	1887.	All ordinary repairs to machinery.	10 ins. diam., 15 ft. long, forged and turned.	14 ins.....	5 tons....	
-----	1884.	-----	-----	-----	-----	Small railway workshops.
Tarapaca Foundry	1891.	Machinery; ordinary repairs.	-----	-----	-----	Facilities for minor repairs to machinery at the machine shops of the Railway Co.
Morro Foundry	1891.	Machinery; ordinary repairs.	-----	-----	-----	
-----	1886.	-----	-----	-----	-----	R. R. shops afford facilities for small repairs.
Caldera and Copiapo Railway Co.	1888.	Machinery; ordinary repairs.	8 ins. diam., forged and turned.	4 ins.....	4 tons....	These shops do good work of the sizes undertaken.
-----	1886.	-----	-----	-----	-----	Railroad shops undertake all ordinary repairs.
Coquimbo Railway Co. (Coquimbo and La Compañia).	1887.	Machinery; ordinary repairs.	5 ins. diam., forged and turned.	No facilities.	2 tons, at Coquimbo shops; 7 tons, at La Compañia.	Pistons of 120 ins. diameter can be turned at these works.
Balfour, Lyon & Co.	1890.	Machinery; large.	10 ins. diam., 25 ft. long, turned.	No facilities.	5 tons....	Santiago Dock will take vessels 320 ft. long.
Fundicion de la Republica.	1890.	Machinery; ordinary repairs.	19 ft. long, turned.	No facilities.	5 tons....	
Fundicion Nacional.	1890.	Machinery; ordinary repairs.	18 ft. long, turned.	No facilities.	3½ tons...	
Lever, Murphy & Co. (At Caleta Abarca, 2 miles distant).	1890.	Large, of all kinds.	10 ins. diam., forged; any diam., 30 ft. long, turned.	18 ins.....	10 tons...	50-ton sheers.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Talcahuano, Chile.	1892.	Government stone building. (Date of completion, un- certain.)	545	.....	80	28½	5	.....
	1891.	Patent Slip (2,000 tons) (Empresa del Dique.)	255	.....		F'd, 3; aft, 8.		
Coronel, and Lota, Chile.	1883.	None						
Corral, and Valdivia, Chile.		.....					
Sandy Point, Chile.	1888.	None						
Honolulu, Oahu, Sandwich Ids.	1891.	Marine Railway (1,200 tons) .. (Sorensen & Lyle.)	750	187½ (cradle)		F'd, 13; aft, 20.	2½	
Hilo, Hawaii, Sandwich Ids.	1883.	None						
Papeete, Tahiti, Society Ids.	1891.	Patent Slip (500 tons) (Marine Arsenal.)						
Pago Pago, Tutulla, Samoa Ids.	1890.	None						
Apia, Upolu, Samoa Ids.	1886.	None						
Levuka, Ovalau, Fiji Ids.	1884.	Patent Slip, small (Levuka Point.)						
Suva, Viti Levu, Fiji Ids.	1891.	None						
Noumea, New Caledonia.	1885. 1890.	Patent Slip (150 tons) Dry Dock, projected (to be constructed by 1893.)	650					
Matupi, Blanche Bay, New Britain.	1886.	None						
Ternate, Ternate Id., Moluccas.	1888.	None						
Amboyna, Amboyna Id., Moluccas.	1888.	None						
Gisser, Banda Isles, Moluccas.	1888.	None						
Buton, Buton Id., D. E. I.	1888.	None						
Macassar, and all ports of Celebes.	1891.	None						
Port Darwin, Northern Territory, Australia.	1892.	None						

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1889.					Government railway shops at Concepcion, 9 miles distant, afford facilities for ordinary repairs to machinery.
	1888.					Facilities for minor repairs at both places.
	1883.					Boiler shops at Valdivia.
None	1888.					
Honolulu Iron Works	1887.	All ordinary repairs.	Shafts of 6 ins. diam., 18 ft. long, are kept in stock.		10 tons, iron; 3 tons, brass.	
None	1883.					
Marine Arsenal (French Govt.)	1885.	Machinery; small.				
None	1890.					
None	1886.					
None	1886.					
None	1884.					
	1890.					Two Govt. shops and two private shops for light machine work.
None	1886.					
None	1888.					
None	1888.					
None	1888.					
None	1888.					
None	1888.					
	1892.					Mud flats have been used by steamers of 18 ft. draught for repairs to propellers.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Cooktown, Queensland, Australia.	1891.	None						
Townsville, Queensland, Australia.	1891.	Patent Slip (650 tons)	280	146 (cradle)		12		
Rockhampton, Queensland, Australia.	1891.	Patent Slip (100 tons)	172	74 (cradle)		5	9½	7½
Maryborough, Queensland, Australia.	1891.	Milton Slip (300 tons)	370	120				
	1891.	Circular Slip (560 tons)	280					
Brisbane, Queensland, Australia.	1892.	Queensland Govt., stone	450	430 (floor)	60	20	0½	4½
	1892.	Alexander Peters: Patent Slip (1,000 tons)	250	200 (cradle)		F'd, 8; aft, 16.		
		Kangaroo Point Slip ... (300 tons)	230		42			
	1892.	More's Patent Slip		150 (cradle)				
Newcastle, New South Wales, Australia.	1891.	Patent Slip (1,000 tons)	350	200 (cradle)	36			
	1891.	Patent Slip (200 tons)	200	100 (cradle)				
Sydney, New South Wales, Australia.	1891.	New South Wales Govt. (Cockatoo Island): Sutherland	638	600	84	32		
		Fitzroy	506	450 (keel)	59	21½		
	1891.	Mort's Dock & Eng'g Co. (Waterview Bay): Dry Dock	410	395 (keel)	66	20½		
		Patent Slips— No. 1 (1,500 tons)	885	270 (cradle)				
		No. 2 (1,000 tons)		200 (cradle)				
		No. 3 (small)						
	1891.	Victoria Jubilee Floating ... (Balmain.)	317		44			
	1891.	Atlas Floating (1,500 tons) .. (Atlas Eng'g Co.)		242 (keel)	73			
	1891.	Floating (600 tons), Balmain. (Rowntree & Co.)	164		42	12		
	1891.	Floating (350 tons), Harwood (Colonial Sugar Rfg. Co.)	145		33	8½		
	1891.	Floating (150 tons), Johnston Bay (J. Anderson.)	100		23	7½		
	1891.	Patent Slip (600 tons)	180			F'd, 6; aft, 14.		
	1888.	Patent Slip (1,500 tons)	430		37			
	(Australian St. Nav. Co.)							

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Townsville Foundry and Shipbuilding Co.	1891.	All ordinary repairs.				
Burns & Twigg	1891.	Machinery; ordinary repairs.				No steam power at patent slip; cradle can be lengthened to take vessels 100 feet long.
Walker, J., & Co	1891.	Hulls and machinery; large.	15 ins. diam. forged and turned.		40 tons.	Facilities for casting propellers of 25 ft. diameter.
Tooth & Co	1891.	Machinery.				
Queensland Govt. Shops (dry dock).	1887.	To hulls only.				
Evans, Anderson, Phelan & Co.	1891.	General repairs; large.	14 ins. diam. forged; 24 ft. long. turned.		12 tons, iron; 1 ton, brass.	20-ton sheers.
Hipwood Brothers.	1887.	Copper-smithing.		24 ins.		
Smith, Forrester & Co.	1891.	General repairs; large.	12 ins. diam. forged; 35 ft. long. turned.		25 tons, iron; 10 tons, brass.	
Sutton, J. W., & Co.	1891.	Hulls and machinery; large.	30 ft. long. turned.		Can cast screws of 20 ft. diam.	30-ton sheers.
Callen Bros.	1891.	Hulls only.				
Morrison & Bearby (Carrington).	1891.	Machinery.				
Orrs & Duke & Sons (Stockton).	1891.	General repairs.				
Redgers, J. S., & Sons	1891.	Machinery.				
Russell, Jas., & Co.	1891.	Machinery.				
Sullivan, O., & Co.	1891.	Hulls only.				
H. B. M. Dockyard (Garden Island).	1889.					Works under construction.
Mort's Dock & Eng'g Co. (Balmain).	1891.	Hulls, engines, and boilers; large.	24 ins. diam., 38 ft. long. forged and turned.	30 ins.	40 tons.	70-ton sheers, 23½ ft. alongside at L. W.
Australian Steam Navigation Co. (Pymont).	1887.	Hulls, engines, and boilers; large.	20 ins. diam., 30 ft. long. forged and turned.	30 ins.	None.	33-ton sheers, 14 ft. alongside at L. W.
Atlas Eng'g Co. (Paramatta River).	1891.	Engines and boilers; large.	12 ins. diam., 23 ft. long., forged and turned.	24 ins.	20 tons.	40-ton sheers.
Albion Engine Wks. (Davy & Sand, Pymont).	1886.	General repairs; large to boilers.				
Chapman & Co. (Balmain.)	1886.	Machinery; all ordinary repairs.				
Foster & Minty (Balmain.)	1886.	Hulls only.				
Graut's Boiler Works (Pymont).	1886.	Boilers only; large.				30-ton sheers, 17 ft. alongside at L. W.
Halliday & Co. (Balmain.)	1886.	Engines and boilers; moderate.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Sydney, New South Wales, Australia. (Continued.)	1888.	Patent Slip (1,500 tons) (Town's.)		260 (length of ship taken)		9½		
Melbourne, Williamstown, and Geelong, Pt. Phillip Bay, Victoria, Australia.	1891.	Victorian Government (Wil- liamstown): Alfred Dock	470	459	80	26½	2½	2
	1890.	Slipway (2,000 tons). G. S. Duke & Son (River Yarra.)	480 (in 2 sec- tions, 300 and 180.)	470	50	17		
	1891.	Wright & Orr (River Yarra.)	330	315	46	18		
	1891.	Floating (600 tons) (Melbourne Coal Ship- ping and Eng'g Co.)	150		37	10½		
	1891.	Patent Slip (500 tons) (Williamstown.)	750	160 (cradle)				
	1891.	Three Slipways (80 tons) (River Yarra.)						
Port Adelaide, South Australia.	1891.	Dunnikier Dock (under con- struction).	550	500 (floor)	60	26	8½	5
	1891.	Patent Slip (1,500 tons) (H. C. Fletcher.)	720	250 (cradle)	33	F'd, 13; aft, 20½		
	1891.	Patent Slip (200 tons) (A. Macfarlane.)	210	80 (cradle)		F'd, 5; aft, 10.		
	1891.	Patent Slip (150 tons) (J. P. Moore.)	220	70 (cradle)		F'd, 4½; aft, 8.		
	1891.	Birkenhead Slip (300 tons) (Thos. Cruikshank.)	350	130 (cradle)		F'd, 8; aft, 15.		
	1891.	Scotia Slip (300 tons)	300	120 (cradle)		F'd, 7; aft, 17.		
Albany, Western Australia.	1891.	Floating (for lighters) (P. and O. Steam Nav- igation Co.)	75					
Freemantle, Western Australia.	1891.	None						
Hobart, Tasmania.	1891.	Patent Slip (1,000 tons) (R. Kennedy & Sons.)	940	219 (cradle)		F'd, 13; aft, 24.	4½	3½
	1891.	Patent Slip (450 tons) (Alex. McGregor.)	580	150 (cradle)		F'd, 10; aft, 18.		
	1891.	Patent Slip (250 tons) (James D. Mackey.)	300	120 (cradle)		F'd, 5; aft, 9.		
Lannceston, Tasmania.	1891.	Floating (150 tons) (Marine Board.)	136		33	8		
Russell, and Opua, Bay of Islands, New Zealand.	1891.	None						
Whangerei, New Zealand.	1883.	None						

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Robertson, D. & W. (Blackwattle Bay).	1891.	Hulls only.	.....	.....	.....	.....
Wildridge, J.	1889.	Hulls only.	.....	.....	.....	.....
Alfred Dry Dock Repair Shops.	1890.	General repairs.	.....	.....	.....	.....
Buchanan, D. & R.	1891.	Hulls and machinery.	.....	.....	.....	.....
Campbell, Sloss & McCann.	1886.	Hulls and machinery; large.	22 ins.diam., 16 ft. long.	Any size	12 tons . . . . .	.....
Forman & Co.	1887.	Hulls and machinery; large.	18 ins.diam., forged and turned.	Any size	10 tons	50 ton sheers; 30-ton steam hammer.
Humble & Nicholoder (Geelong).	1887.	Engines, moderate; boilers, large.	.....	8 ins.	7 tons . . . . .	.....
Johnson & Co. (Tyne Foundry).	1887.	Hulls, engines, and boilers; large.	18 ins.diam., 30 ft. long, forged and turned.	Any size	12 tons	60-ton sheers; 25-ton steam hammer.
Melbourne Coal Shipping & Engineering Co. (Williamstown).	1891.	Hulls, engines, and boilers; large.	18 ins.diam., 20 ft. long, turned.	24 ins. ....	.....	15-ton sheers.
Robeson Bros. & Co.	1887.	Engines and boilers; large.	14 ins.diam., 27 ft. long, turned.	Any size	10 tons . . . . .	.....
Locomotive Shops, Victorian Govt. (Williamstown).	1887.	Ordinary machinery repairs.	.....	.....	.....	18-ton sheers.
Carron Iron Works (R. Lindsay).	1890.	Machinery; large.	12 ins.diam., 24 ft. long.	Any size.	7 tons	In addition to the establishments noted there are others of less importance.
Fletcher, H. C.	1887.	General repairs.	8 ins. diam., 12 ft. long.	.....	None . . . . .	.....
Fletcher, John . . . . .	.....	.....	.....	.....	.....	.....
Gray Bros . . . . .	.....	.....	.....	.....	.....	.....
Fulton & Co.	1890.	Machinery; large.	.....	.....	.....	.....
Hooker & Co. ....	.....	.....	.....	.....	.....	.....
Martine & Co. ....	.....	.....	.....	.....	.....	.....
Union Engineering Co.	1890.	Machinery; large.	No heavy forging.	No facilities.	16 tons . . . . .	.....
South Australian Govt. Shops.	1887.	General repairs.	No heavy forging.	15 ins.	8 tons	For repair of dredgers; 25-ton sheers.
None	1885.	.....	.....	.....	.....	.....
Kennedy, R., & Sons	1886.	Hulls, engines, and boilers; small.	8 ins. diam., 20 ft. long.	12 ins.	4 tons	39-ton sheers.
Knight, W., & Co	1891.	Engines and boilers.	.....	.....	.....	.....
Salisbury, E., & Co	1891.	Engines and boilers.	.....	.....	.....	.....
None	1890.	.....	.....	.....	.....	.....
.....	1883.	.....	.....	.....	.....	There are several machine shops.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Auckland, New Zealand.	1891.	Calliope Dock, stone, new ... (Harbor Board.)	525	500 (keel)	80	33	11	9
	1891.	Auckland City Dock, old....	312	300 (keel)	43	13½		
Napier, New Zealand.	1891.	Patent Slip (150 tons)..... (John Northey.)	190	90 (cradle)		F'd, 4; aft, 7.	8	7
Wellington, New Zealand.	1892.	Patent Slip (2,000 tons)..... (Evans Bay.)	1,075	260 (cradle)		16 (head)	5	2½
	1892.	Patent Slip (100 tons)..... (Coffey & Co.)		100 (length vessel taken)				
Nelson, New Zealand.	1891.	Cradle (150 tons)..... (Anchor Co.)		130		7½	12½	10
Lyttelton, New Zealand.	1891.	Dry Dock.....	503	450 (floor)	62	22½	7½	5½
	1891.	Patent Slip (300 tons).....	500	150 (cradle)		F'd, 6; aft, 8.		
Timaru, New Zealand.	1892.	Patent Slip (300 tons).....	350	130 (cradle)			6½	
Dunedin, and Port Chalmers, New Zealand.	1891.	Dry Dock (Koputai Bay).... (Otago Dock Trust.)	335	328 (keel)	50	19½		
	1888.	Patent Slip (600 tons) (In bad repair.)						
Bluff Harbor, New Zealand.	1891.	Patent Slip (200 tons).....						
Greymouth, New Zealand.	1891.	None.....						

the following Pacific Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Fraser & Sons.....	1887.	Hulls and machinery.	11 ins. diam., 20 ft. long.	24 ins.....	10 tons...	50-ton sheers at Cal-lope Dock.
Hawkeswood, Bach & Co.	1891.	Hulls and machinery.				
Macefield & Co. (Albert Iron Foundry).	1891.	Engines and boilers.	6 ins. diam., 20 ft. long.	24 ins.....	7 tons....	
McCroskie & Son.....	1891.	Engines and boilers.				
Galloway & Niven ..	1891.	Machinery.				
Cable & Co.....	1887.	Ordinary repairs.	6 ins. diam., 20 ft. long.	18 ins.....	10 tons...	None of the Wellington establishments are prepared to undertake work of more than moderate size.
Luke, S., & Sons.....	1887.	Ordinary repairs.	6 ins. diam., 18 ft. long.		10 tons...	
Robertson & Co.....	1887.	Ordinary repairs.	6 ins. diam., 18 ft. long.		10 tons...	
Seagar, Edward.....	1887.	Ordinary repairs.	6 ins. diam., 20 ft. long.	16 ins.....	4 tons....	
Anderson, John.....	1887.	Large, to machinery.	6 ins. diam., 16 ft. long.	18 ins.....	12 tons...	
Scott Bros. (Atlas Engineer'g Works, Christchurch).	1887.	Large, to machinery.	6 ins. diam., 30 ft. long.	Any usual size.	10 tons...	
Dry Dock Repair Shops.	1890.	General repairs.				80-ton sheers at Dry Dock.
Anderson & Morrison.	1887.	Copper-smithing.		Any size....		
Begg & Wilkinson..	1887.	Machinery, small.	6 ins. diam., 10 ft. long.		2½ tons...	
Burt, A. & T.....	1887.	Copper-smithing.		Any size....	6 tons, brass.	
Cossens & Black (Britannia Iron Works).	1887.	Machinery, small.	6 ins. diam., 20 ft. long.			
Kincaid, McQueen & Co. (Vulcan Foundry).	1891.	Hulls and machinery, large.	10 ins. diam., forged, any size turned.		8 tons....	20-ton sheers.
Morgan & Cable (Port Chalmers).	1891.	Large, to engines and boilers.	Any ordinary diam., 38 ft. long, forged and turned.	Any size....	10 tons...	10-ton steam hammer.
Sparrow, Joseph....	1891.	Engines and boilers.				
Sparrow, R. S., & Co. (Dunedin Iron Works).	1891.	Hulls and machinery, large.	15 ins. diam., 30 ft. long.	Any size....	6 tons....	20-ton sheers.
Shott's Iron and Steel Works (Burnside).	1887.	Heavy forgings.	18 ins. diam., 5 tons wt., forged.		3 tons, steel.	
Young & Gardiner (Port Chalmers).	1891.	Machinery.				
J. Johnstone (Vulcan Foundry, Invercargill).	1891.	Machinery, ordinary repairs.	5 ins. diam., 30 ft. long, forged and turned.		3 tons....	There is another establishment at Invercargill with similar facilities. The distance from Invercargill to Bluff Harbor is 20 miles by rail.

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Petropanlovski, Kamchatka.	1891.	None						
Vladivostok, Siberia.	1892.	Floating, sectional (4,500 tons) (Russian Govt.)	301			18 (as now moored)		
	1892.	Granite, under construction. (Russian Govt.)	666	601 (floor)		30		
Hakodate, Japan.	1892.	None						
Yokohama, Japan.	1889.	Kildoyle's Slip (small)						
Yokosuka, Japan.	1891.	Government, stone: No. 1 No. 2 No. 3	392	377½	82	22½	8	4
			502½	482½	94½	28½		
			308½	289½	45½	17½		
Tokio, Japan.	1891.	Tokio Dry Dock	300		52	14½	6½	4½
	1892.	Iahikawajinna (Tokio Shipbdg. Yard.)	220		42	14		
Hiogo, Kobe, and Osaka, Japan.	1891.	Kawasaki Shipbuilding and Engineering Co.: Patent Slips— No. 1 (2,000 tons) No. 2 (600 tons).....	900				5½	4½
			600					
			250					
Nagasaki, Japan.	1892.	Nagasaki Dry Dock, stone (Y. Iwasaki.)	438	400	589/ 77½	25½	0	7½
	1892.	Patent Slip (1,200 tons)..... (Y. Iwasaki.)	750	220 (cradle)		18		
Sasebo, Japan.								
Chemulpo, Corea.	1888.	None						
Port Arthur, China.	1890.	Dry Dock (Chinese Govt.) ..	410		72	26½ (blocks)	8	

of the following Asiatic Station ports.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None	1885.					
Russian Government Dockyard.	1892.	Facilities for all ordinary repairs.				50 ton floating crane. The floating dock is in four sections, of which the first, 100 ft. long, can be used as a depositing dock. Two granite docks, similar to the one already under construction, are projected.
Hakodate Engine Works.	1892.	Machinery.	8 ins. diam., 20 ft. long.		½ ton.	There are several wooden shipbuilding yards.
Yokohama Engine and Iron Works (E. Kildoyle).	1890.	Large, of all kinds.	20 ft. long, turned.	24 ins.	6 tons.	
Whitfield & Co.	1887.	Large, of all kinds.	18 ins. diam., 25 ft. long, turned.	14 ins.	2 tons.	
Imperial Government Dockyard.	1887.	Large.	12 ins. diam., 20 ft. long, forged and turned.	21½ ins.	20 tons.	40-ton crane; 20-ton floating derrick. No. 2 dock can be divided into two sections.
Imperial Naval Arsenal.	1890.	Small.				
Tokio Shipbdg. Yard.	1892.	Hulls and machinery.			6 tons.	
Onohama Imperial Dockyard (Kobe Point).	1890.	Ordinary repairs of all kinds.				Formerly private establishment of E. C. Kirby & Co.
Kawasaki Shipbuilding and Engineering Co. (Hiogo).	1891.	Hulls, engines, and boilers.	12 ins. diam.	8 ins.	5 tons.	23-ton shears.
Hirano Iron Works (Osaka).	1892.	Hulls, engines, and boilers.				
Ellerton, J. (Osaka).	1891.	Hulls only.				
Nagasaki Dockyard and Engine Works (Mitsu Bishi Wks., Akunoura; Y. Iwasaki).	1892.	Large; hulls, engines and boilers.	6 ins. diam., forged; 14 ins. diam., turned.	24 ins.	25 tons.	50-ton shears. The engine works at Akunoura, together with the dry dock at Tategami and the patent slip at Kosuke, were formerly property of the government; sold, 1884. Patent slip has taken a vessel 270 ft. long.
Cordell, C. F. (Akunoura.)	1891.	Hulls only.				
	1888.					Naval dockyard under construction; two dry docks proposed, largest to be about 500 ft. long.
None	1888.					
Chinese Government Dockyard (under construction).	1889.					Pumping machinery not set up at date of report; shops under construction; floating basin unfinished.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated).	Length.		Width at en- trance.	Depth on sill. H. W. ordin y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
New Chwang, China.	1891.	None.....						
Taku, and Tientsin, China.	1891.	Chinese Government.....		340	39	14	13	
	1891.	(Taku Dockyard.) Taku Tug and Lighter Co ..	225		36	10		
Chefoo, China.	1892.	None.....						
Chinkiang, Yangtse River, China.	1883.	None.....						
Hankow, Yangtse River, China.	1892.	None.....						
Shanghai, China.	1891.	Chinese Government, timber (Kiangnan Dockyard.)	340			19	10	7
	1888.	Boyd & Co.:						
		New Dock, timber	500	450	80	22		
		Old Dock, timber	380		60	12		
		(Old Dock being enlarged to these dimensions.)						
Shanghai, China.	1891.	S. C. Farnham & Co.:						
		Old Dock, timber.....	400	377	57	17		
		Pootung Dock, timber.....	350	325	70	16		
		Lower Dock, timber.....	345	336	70	10		
Ningpo, China.	1891.	None.....						
Foochow, China.	1891.	Pagoda Anchorage Dock... (Jardine, Matheson & Co., agents.)	390	300 (keel)	55	15	17	14½
	1891.	Patent Slip (1,200 tons)... (Chinese Govt.)		330		16		
	1891.	Dry Dock, under construc'n. (Chinese Govt.)	480					
Amoy, China.	1890.	Amoy Dock, granite.....	310		{ 60 } { 33½ }	16	18½	14½
	1890.	Kulangseu Dock, granite....	245		{ 66 } { 50 }	12½		
	1890.	Bellamy Dock, granite.....	185		{ 51 } { 28 }	12½		
Swatow, China.	1891.	None.....						
Keelung, Formosa.	1891.	None.....						
Tamsui, Formosa.	1891.	None.....						

the following Asiatic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None	1885.					
Chinese Government Dockyard (Taku).	1887.	Large.....	8 ins. diam., forged; any diam., 30 ft. long, turned.		10 tons ..	50-ton sheers at dockyard. Taku affords the only facilities for repairs on Peiho River; there are no engineering establishments at Tientsin.
None	1883.					
None	1883.					
Hanyang Iron and Steel Works and Mining Department (Chinese Government).	1892.					Extensive Bessemer plant nearly completed. Both establishments at Hanyang (opposite Hankow, on W. bank of Han River) are intended for government use only.
Hanyang Gun Factory (Chinese Government).	1892.					
Chinese Government Arsenal and Dockyard (Kiangnan).	1888.	Facilities for large work of all kinds.	12 ins. diam., forged and turned.		30 tons...	40-ton sheers.
Boyd & Co	1891.	Hulls, engines, and boilers; large.	Any diam., 30 ft. long, turned.	Any size....	20 tons...	60-ton sheers at New Dock.
Farnham, S. C., & Co.	1891.	Hulls, engines, and boilers; large.	20 ins. diam., 30 ft. long, turned.	Any size....	15 tons...	Two sets 50-ton sheers at Old Dock; 50-ton sheers at Footing Dock.
Fouchung & Co.....	1891.	Machinery.				
None	1884.					
Chinese Government Dockyard.	1891.	Large.....	12 ins. diam., 30 ft. long, forged and turned.		20 tons...	60-ton sheers at dockyard jetty; patent slip at dockyard lifts vessels side-wise; new dry dock is to be finished about 1896.
Amoy Dock Co.....	1886.	All ordinary repairs.	29 ins. diam., turned.	9 ins.....	8 tons....	25-ton sheers.
None	1883.					
None	1883.					

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Hong Kong, China.	1891.	Hong Kong and Whampoa Dock Co.:					7½	3
		Kowloon Docks, granite—						
		No. 1	530		{ 86 } { 70 }	30		
		No. 2	340		74	18		
		No. 3	245		49½	13		
		Cosmopolitan, granite— (Tai-Kwok-Tsui.)	465 (in 2 sec- tions, 235 and 216).		{ 85 } { 62 }	21		
		Aberdeen Docks, granite—						
Hope	433		84	24				
Lamont.	340		64	16				
Patent Slips (Kowloon)—								
No. 1 (1,200 tons).	650	250 (cradle)	40 (cradle)	11				
No. 2		230 (cradle)	60 (slip)	11				
Whampoa, China.	1888.	Chinese Government:				7 to 8	3 to 5	
		Cooper, granite	500 (in 2 sec- tions)		85			14
		Hood Tsoon, granite.	350		59	18		
Canton, China.	1891.	None						
Saigon, Cochin China.	1891.	French Government:				12		
		Dry Dock	508½		74½			25
		Dry Dock	237		31½			10
		Floating (1,600 tons)	300		60	20		
Bangkok, Siam.	1891.	Siamese Government.		300		13	11	9
	1891.	Bangkok Dock Co. (Mud; timber lined, except at upper end.)	360	270 (keel)	60	12			(irregular)
Manila, and Cavite, Luzon, Philippine Ids.	1891.	Cañacao Patent Slip (2,000 tons), hydraulic.	820	270 (cradle)	36 (cradle)	8½; 18½	5½	
	1891.	Govt. Patent Slip (300 tons). (At present dismantled.)	196½					
Cebu, Cebu Id., Philippine Ids.	1891.	None						
Santiago, Ponapi, Caroline Ids.	1887.	None						
Victoria, Labuan Id., B. E. I.	1891.	None						
Kuching, Sarawak.	1891.	None						
Surabaya, Java.	1892.	Netherlands Government:				5		
		Floating, iron (4,800 tons).	328		74½			
		Floating, iron (2,400 tons).	196½		62			18
	1892.	Ned. Indische Industrie:						
	Dry Dock.	190		30	8			
1892.	Surabaya Dry Dock Co.:							
	Floating, wood (1,350 tons)	240		58½				

The following Asiatic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
H. B. M. Dockyard ..	1889.	Large.....	10 ins. diam., forged and turned.	Any size.....	2 tons....	20-ton sheers.
Hong Kong & Whampoa Dock Co.	1890.	Hulls and machinery; large.	14 ins. diam., 32 ft. long, forged and turned.	Any size.....	20 tons....	40-ton sheers at Kowloon Docks; 20-ton sheers at Cosmopolitan Dock; 40-ton sheers at Aberdeen Docks.
Fenwick, Geo., & Co. Gordon, A. G., & Co.	1890. 1890.	Machinery. Machinery.	.....	.....	.....	.....
Chinese Government Dockyard (purchased from Hong Kong & Whampoa Dock Co.)	1888	Small .....	.....	.....	.....	50-ton sheers at the Cooper Dock; this dock was in good condition in June, 1888; the other was dismantled, and was in use as a floating basin for torpedo boats.
French Government Dockyard. Cie. Messageries Flouiales.	1889. 1887.	Large..... All ordinary repairs.	.....	.....	.....	30-ton sheers; two 50-ton floating steam cranes.
Siamese Government Dockyard. Bangkok Dock Co.	1891. 1886.	Machinery; small. General repairs; small.	5 ins. diam., forged and turned.	.....	2 tons....	20-ton sheers.
Spanish Government Dockyard (Cavite). Varadero de Manila (Manila Slipway Co., Cafiaço).	1887. 1888.	All ordinary repairs. All ordinary repairs.	No heavy forging.	10 ins.	3 tons....	30-ton sheers.
None	1887.	.....	.....	.....	.....	.....
None	1887.	.....	.....	.....	.....	.....
Netherlands Government Dockyard. Nederlandsch Indische Industrie. McKean & Co. Volharding Co. Young & Gill	1890. 1891. 1891. 1891. 1891.	Large..... General repairs. Machinery. Machinery. Boilers and heavy castings.	.....	.....	.....	100-ton crane; 80-ton and 30-ton sheers.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Batavia, Java.	1892.	Netherlands Govt. Docks (operated by Tanjong Priok Dry Dock Co.):						
		Floating, iron (4,000 tons)	295½		65½	22		
	Cylinder Dock (500 tons)	180		40	8½			
	1892.	Netherlands Trading Co.: Floating (2,000 tons)..... (Amsterdam Id.)	200		45	12		
Singapore, Straits Settlements.	1892.	Tanjong Pagar Dock Co.:					10	7½
		Victoria, granite.....	484	450	65	20		
	Albert, concrete.....	495	480	60	21			
	1892.	New Harbor Dock Co.:						
		No. 1, granite.....	459	444	62	19		
		No. 2, clay..... (Paved and partially faced with granite.)	415		62	14		
1892.	S'pore Slipw'y and Eng'g Co.:	Patent Slip (500 tons)..... (Tanjong Rhoo.)	429	180 (cradle)	36 (cradle)	18		
Deli, Sumatra.	1891.	None.....						
Penang, Straits Settlements.	1891.	Prye River Dock Co. (Prov- ince Wellesley):					9	7
		Dry Dock, clay..... (Wood facings, cement floor.)		330	50	14½		
		Patent Slip (200 tons) ...	200	80 (cradle)		3½; 7.		
Acheen, and Oehleh, Sumatra.	1891.	None..... (One projected at Salang Bay, 20 miles distant.)						
Padang, Sumatra.	1891.	None.....						
Port Blair, Andaman Ids.	1887.	None.....						
Moulmein, British Burmah.	1891.	Gridiron (300 tons)..... (9 miles below city.)		170			15	12
	1891.	Patent Slip (for vessels 100 feet long).						
Rangoon, British Burmah.	1891.	Irrawaddy Flotilla Co.:					19	14
		Dalla Gridiron. Patent Slip.....	160		45	10½		
Bassein, British Burmah.	1891.	None.....						
Akyab, British Burmah.	1891.	None.....						

the following Asiatic Station ports.—Continued.

Shipyards, machine shops, etc. having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Tanjong Priok Dry Dock Co.	1892.	Large, of all kinds.				25-ton crane; two private shops at Batavia proper; naval establishment formerly at Onrust Island, including floating iron dock, transferred to Surabaya.
Tanjong Pagar Dock Co.	1892.	Large, of all kinds.	11 ins. diam., 25 ft. long, finished; forgings in stock.	16 ins.	10 tons, iron; 5 tons, brass.	40-ton sheers, 65 ft. high; warp out 30 ft.; 28 ft. alongside at L. W.
New Harbor Dock Co.	1892.	Large, of all kinds.	12 ins. diam., welded; any diam., turned.	Any usual size.	10 tons...	45-ton sheers, 85 ft. high; warp out 24 ft.; 24 ft. alongside at L. W.
Howarth, Erskine & Co.	1892.	Machinery; ordinary repairs.	7 ins. diam., welded; 14 ins. diam., turned.	20 ins.	6 tons....	
Lyon, J. M., & Co...	1889.	Hulls, engines, and boilers; small.	6 ins. diam., forged; 18 ins. diam., 24 ft. long, turned.	Any usual size.	1 ton....	
Riley, Hargreaves & Co.	1892.	All ordinary repairs.	15 ins. diam., turned; no forge.	18 ins.	8 tons....	
Tanjong Rhoo Engine Works (Singapore Slipway and Eng'g Co.)	1892.	Hulls, engines, and boilers; small.	4 ins. diam., forged; 8 ins. diam., turned.	14 ins.	10 tons, iron; 1 ton, brass.	
Victoria Engine Works.	1892.	Machinery.				
None	1886.					
Penang Foundry Co.	1889.	All ordinary repairs.	20 ins. diam., 20 ft. long, turned.	20 ins.	4 tons....	15-ton sheers.
Prye River Dock Co. (Province Wellesley).	1891.	General repairs; small.	5 ins. diam., forged.	8 ins.	3 tons....	20-ton sheers.
	1887.					Small works at Olehleh and Kotta Rajah.
	1887.					One small shop.
None	1887.					
	1890.					Facilities for small repairs.
Irrawaddy Flotilla Co.	1891.	Hulls, engines, and boilers; large.	14 ins. diam., 30 ft. long, forged and turned.	18 ins.	12 tons...	30-ton sheers.
Bulloch Bros. & Co..	1891.	Machinery.				

the following Asiatic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Apcar & Co (Seebpore).	1887.	Machinery; all ordinary repairs.	5 ins. diam., forged; 16 ins. diam., 20 ft. long, turned.	Any size	4 tons	100-ton sheers at Kidderpore wet docks.
Burn & Co (Howrah).	1887.	Large, of all kinds.	12 ins. diam., 25 ft. long, forged and turned.	18 ins.	25 tons	20-ton sheers (temporary).
King, John, & Co. (Howrah and Goosery.)	1887.	Engines and boilers; large.	6 ins. diam., 30 ft. long, forged; any diam., 30 ft. long, turned.	Any size	20 tons	
Port Commissioners' Shops (Howrah).	1887.	Small, to hulls and machinery.	No facilities for forging shafts.	12 ins.	None	30-ton floating crane.
Department of Public Works.	1887.	Machinery; ordinary repairs.	5 ins. diam., forged and turned.	12 ins.	3 tons	10-ton sheers.
Gun Carriage Factory.	1887.	Moderate repairs to engines.	24 ins. diam., 25 ft. long, turned; 1 ton weight, forged.	Any size	2 tons	
Madras Railway Co.	1887.	Minor repairs, to machinery only.	No. forge; turn 16 ft. long, 5 tons weight.	Up to 5 cwt., any ordinary diameter.	6 tons	
Massey & Co.	1887.	Machinery; small.	8 ins. diam., 20 ft. long.	Only small pipes.	10 tons	
Oakes & Co	1887.	Machinery; small.	6 ins. diam., 12 ft. long.	12 ins.		20-ton sheers.
French Government Arsenal.	1884.	Small				
South Indian Railway Co.	1887.	Machinery				
H. B. M. Dockyard	1889.	2 lathes at dockyard.				12-ton sheers; 7 feet alongside at L.W.; dockyard in use as a supply depot.
	1891.					Some facilities for slight repairs.
Indian Govt. Shops (Works Dept. and Railway Dept.)	1888.	Machinery				15-ton crane on Government Wharf.
Colombo Iron Works (John Walker & Co.)	1887.	Machinery; large.	9 ins. diam., forged; 15 ins. diam., 18 ft. long, turned.	Any size	10 tons	

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.		
			Over all.	Over blocks.			Sp'gs.	Neaps	
Bombay, India.	1891.	New, stone (Prince's Docks).	532 24 ft. longer, with caisson at outer stop.	500	65½	25½ (blocks)	14½	11½	
	1891.	Government Dockyard: Bombay, stone, 3 sections—	Upper..	648	47½	15	(irregular)		
			Middle..	209	51½	17½			
			Lower..	183	51½	17½			
	1887.	P. & O. Steam Navigation Co.: Ritchie Dock, Mazagon.....	Small Dock, Mazagon.....	470	436	66	18 to 21		
			Hydraulic Lift, iron (10,000 tons), Hog Island. (Leased by P. & O. Co.)	150	140	34	7 to 10		
	1887.	British India S. N. Co.: Mogul Dock, 2 sections—	Upper..	380	80	28½		
			Lower..	196	.....	47	17	
	1887.	Vigas Patent Slip, Mazagon. (1,200 tons)	217	60	17		
			.....	232 (cradle)	.....	.....	
Kurrachee, India.	1891.	Dry Dock, Manora..... (Kurrachee Port Trust.)	167	.....	32	9½	8½	7 (irregular)
Bushire, Persia.	1891.	None.....	.....	.....	.....	.....	.....	.....
Bussorah, Asiatic Turkey.	1887.	Mud Dock, small..... (Turkish Govt.)	.....	.....	.....	.....	.....	.....
	1887.	Mud Dock, Margile..... (Euphrates-Tigris Steam Navigation Co.)	280	.....	.....	9	.....	.....
Muscat, Arabia.	1891.	None.....	.....	.....	.....	.....	.....	.....
Aden, Arabia.	1891.	None.....	.....	.....	.....	.....	.....	.....
Perim Id., Strait of Bab-el-Mandeb.	1891.	None.....	.....	.....	.....	.....	.....	.....
Suakim, Egypt.	1885.	None.....	.....	.....	.....	.....	.....	.....
Jeddah, Arabia.	1891.	None.....	.....	.....	.....	.....	.....	.....
Suez, Egypt.	1892.	Government Dry Dock..... (Port Ibrahim.)	430	406	73½	23	7	4	

the following Asiatic Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed	Castings: weight of largest that can be made.	Remarks.
Government Dock-yard.	1891.	Large, of all kinds.	10 ins. diam., forged; all sizes machined.	Any size	25 tons...	30-ton sheers at the Dockyard; 100-ton cranes in Prince's and Victoria wet docks; Duncan Docks are changed to a floating basin.
Peninsular and Oriental Steam Nav'n Co. (Mazagon and Hog Island).	1887.	Large, of all kinds.	10 ins. diam., forged; 23 ins. diam., 30 ft. long, turned.	Any size	8 tons....	70-ton sheers at the Ritchie Dock.
British India Steam Navigation Co. (Mazagon).	1887.	Ordinary repairs.	.....	Any size	None	
Alcock, Ashdown & Co.	1886.	General repairs; large.	Any diam., 24 ft. long, turned.	24 ins	10 tons..	
Longworth, D	1886.	General repairs; large.	9 ins. diam., forged; 13 ins. diam., turned.	18 ins	8 tons....	
Richardson & Crudas.	1886.	All ordinary repairs.	15 ins. diam., 30 ft. long, turned.	12 ins	20 tons...	
Cosser & Co	1891.	General repairs to machinery; small, to hulls.	.....	.....	.....	20-ton sheers on railway jetty; 30-ton crane, Merewether Pier.
Herman, B. H.	1891.		.....	.....	.....
Mackenzie & Co.	1891.		.....	.....	.....
Markwick & Co.	1891.		.....	.....	.....
None	1886.	.....	.....	.....	.....
Turkish Government Dockyard.	1887.	Small work only.	.....	.....	.....	Docking and repairing facilities of this port are limited to the needs of the river steamers plying to Bagdad.
Euphrates-Tigris (Blasse-Lynch) Steam Nav'n Co. (Repair yard at Margile).	1887.	Small work only.	.....	.....	.....
None	1886.	.....	.....	.....	.....
Luke Thomas & Co. (Steamer Point).	1886.	Machinery; all ordinary repairs.	No facilities for heavy forging.	Any size .....	.....
P. & O. Steam Nav'n Co.	1886.	General repairs; small.	.....	.....	.....
Perim Coal Co.	1891.	Engines and boilers; all ordinary repairs.	.....	Any size	About 1 ton.	
None	1885.	.....	.....	.....	.....
P. & O. Steam Nav'n Co. (Port Ibrahim).	1886.	All ordinary repairs.	.....	.....	.....	30-ton floating crane owned by Egyptian Govt.

Particulars of docking and repairing facilities

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Stromness, Orkney Ids.	1891.	Cairston Pat. Slip (900 tons) (G. and P. Copland.)	.....	200 (cradle)	.....	10½	10	7½
	1891.	Ness Patent Slip (300 tons) (Fred Stanger.)	.....	104 (cradle)	.....	9½		
Inverness, Scotland.	1891.	Gridiron	70				10	7½
Peterhead, Scotland.	1891.	New Dock	190		35	13½	11½	9½
	1891.	Old Dock	136		34	11		
Aberdeen, Scotland.	1891.	Dry Dock (Albert Basin)....	524		50	20	12	10
	1891.	Patent Slips: J. Duthie, Sons & Co (1,000 tons.)	430		25 (rails)			
		A. Hall & Co.; No. 1 (800 tons).	380		45			
		No. 2 (500 tons).	335		42			
Montrose, Scotland.	1891.	Patent Slip (500 tons) (Montrose Pat. Slip Co.)	300		32		14	11
Arbroath, Scotland.	1891.	Patent Slip (600 tons)	450	150 (cradle)	44	8½; 9½	14	11
Dundee, Scotland.	1891.	East Dock (new)	513	500	53½	17½	14½	11½
	1891.	West Dock (old)	284	250	38½	13½		
	1891.	Patent Slip (vessels of 800 tons register).	545	156 (cradle)	44	7½; 15½		
Kirkcaldy, and Burntisland, Scotland.	1891.	Ross Patent Slip. Inver- keithing (10 miles dis- tant).	200			6½; 10½	16½	12½
Alloa, and Grangemouth, Scotland.	1891.	Alloa Dry Dock	210		37	11½	17½	15
	1891.	Grangemouth Dry Dock (G' mouth Dockyard Co.)	205		33½	11½		
Granton, Scotland.	1891.	Patent Slip (2,000 tons)		236 (cradle)	40	10½; 15.	16	12½
Leith, Scotland.	1891.	Harbor Commissioners: Prince of Wales	382		70	21	16½	12½
		Edinburgh	300		40	17½		
		Commercial	266		35	15½		
	1891.	Menzies & Co.: Upper	164		35	13		
		Lower	174		35	11		
1891.	J. McKenzie & Co.: Sandport St.	180		31	11			
Blyth, England.	1892.	Blyth Dry Dock Co.: No. 1	345		45	16	15	11
		No. 2	285		47	17½		
	1892.	Blyth Shipbuilding Co.: No. 1	355		55	20½		
		No. 2	320		51	20½		
	1891.	Union Coöperative Ship- building Society: Floating Dock	122		32	8½		
	Gridiron	270		40				

of the following *European Station ports.*

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1891.					Wooden shipbuilding carried on.
	1891.					Wooden shipbuilding carried on.
Blaikie Bros	1891.	Machinery.				50-ton sheers in Victoria Docks.
Clyne, Mitchell & Co.	1891.	Machinery.				
Duthie, J., Sons & Co.	1891.	Hulls only.				
Hall, A., & Co.	1891.	Hulls and machinery.				
Hall, Russell & Co.		Hulls and machinery.				
Dens Iron Works (A. Shanks & Son).	1891.	Machinery.				
Britannia Engine Works (J. H. Whyte & Cooper).	1891.	Machinery.				70-ton crane, Victoria Docks.
Bruce, W	1891.	Machinery.				
Carmichael, J., & Co.	1891.	Machinery.				
Gourlay Bros. & Co	1891.	Hulls and machinery.				
Pearce Bros	1891.	Hulls and machinery.				
Thompson, W. B., & Co.	1891.	Hulls and machinery.				
Scott, John, & Co	1891.	Hulls and machinery.				Patent slip at Inverkeithing will take vessels of 300 tons, 150 feet long.
Grangemouth Dockyard Co.		Hulls only.				20-ton crane, Grangemouth Dock.
Cran, John, & Co	1891.	Hulls and machinery.				Crane power, Leith Docks, up to 80 tons.
Hawthorns & Co	1891.	Hulls and machinery.				
Morton, S. H., & Co	1891.	Hulls and machinery.				
Ramage & Ferguson.	1891.	Hulls and machinery.				
Blyth Shipbuilding Co.	1891.	Hulls				50-ton sheers, Blyth Dry Dock Co.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.		
			Over all.	Over blocks.			Sp'gs.	Neaps	
North Shields, England.	1892.	H. S. Edwards & Sons: No. 4 No. 5	367	-----	52	22½	14½	11½	
			360	348½	51	23½			
	1892.	Smith's Dry Dock Co.: Dry Dock Off-shore Floating (un- der construction).	300	-----	60	16			
			335	-----	65	25			
	1892.	Young & McLearn.	182	-----	40	15½			
	1892.	Patent Slip (1,200 tons) (Hepple & Co.)	-----	202 (cradle)	-----	F'd, 6; aft, 9.			
South Shields, England.	1892.	H. S. Edwards & Sons: No. 1 No. 2 No. 3	330	320	46½	18	14½	11½	
			305	-----	40	15½			
			430	-----	55	24			
	1892.	John Readhead & Sons	329½	320	55	24			
			315	-----	45	18			
	1892.	Tyne Dock Engineering Co.	-----	-----	50	18			
			-----	-----	44	18			
	1892.	Moralee Bros.: Thrift Street Holborn Floating (Tyne Docks).	230	-----	40	16			
			200	-----	34	14			
	-----	-----	-----	134	40	13			
	-----	-----	-----	-----	-----	-----			
	1892.	W. E. Boutland	127	-----	34½	12			
	1892.	J. P. Rennoldson & Sons: Patent Slip (800 tons)	250	160 (cradle)	-----	F'd, 6; aft, 16.			
	Newcastle-on- Tyne, England.	1892.	R. & W. Hawthorn, Leslie & Co. (Hebburn).	450	430	60	21	15½	11½
		1892.	Palmer's Shipbuilding & Iron Co. (Jarrow): Dry Dock Patent Slip (1,600 tons)	440	411½	70	18		
				600	-----	65	18		
		-----	-----	-----	-----	-----	-----		
-----		-----	-----	-----	-----	-----			
1892.		Mercantile Dry Dock Co.: Jarrow, No. 1	360	350	60	21			
1892.		Jarrow, No. 2	-----	350	50	21			
1892.		Tyne Pontoons and Dry Docks Co. (Wallsend): Dry Dock Pontoon No. 1(2,000 tons) Pontoon No. 2(3,000 tons) Gridiron	387	-----	84	25½			
			261	-----	-----	-----			
			300	300	-----	20			
			240	-----	-----	-----			
1892.		Wallsend Slipway and En- gineering Co.: Patent Slips— No. 1 (3,000 tons) No. 2 (3,000 tons)	1,000	300 (cradle)	50	F'd, 13; aft, 23.			
			1,000	300 (cradle)	50	F'd, 13; aft, 23.			
1892.		Cleland's Graving Dock and Slipway Co. (Willington): Patent Slips— No. 1 (1,200 tons) No. 2 (2,500 tons)	580	210 (cradle)	46	23			
			620	310 (cradle)	57	23			
1892.		J. & D. Morris (Pelaw Main): Patent Slip (1,000 tons) Patent Slip (500 tons)	350	-----	34	11			
	238		-----	34	11				
1892.	W. H. Moralee (Hebburn): Long Row Floating	128	-----	40	14				
1892.	J. & P. C. Winlo (Hebburn): Mill Dam Floating	120	-----	36	10				
1892.	Tyne Improvement Com'rs: Howdon Patent Slip (500 tons)	500	-----	-----	-----				
		-----	-----	-----	-----				
1892.	Tyne Main Slipway Co.: Patent Slip (500 tons)	350	-----	-----	F'd, 9; aft, 12.				
1892.	Tyne Wherry Co.: Friar's Goose Patent Slip (300 tons)	180	120 (cradle)	-----	-----				

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Baird & Barnsley ...	1891.	Machinery.				
Hepple & Co.	1891.	Hulls and machinery.				
Smith's Dry Dock Co.	1891.	Hulls only.				
Eltringham, Jas. T., & Co.	1891.	Hulls only.				
Northern Marine Engineering Co.	1891.	Machinery.				
Readhead, John, & Sons.	1891.	Hulls and machinery.				
Rennoldson, J. P., & Sons.	1891.	Hulls and machinery.				
Abbot, John, & Co. (Gateshead).	1891.	Machinery.				
Armstrong, Sir W. G., Mitchell & Co. (Elswick, and Low Walker).	1891.	Hulls.				100-ton crane.
Black, Hawthorn & Co. (Gateshead).	1891.	Machinery.				
Clark, T., & Co. (Elswick).	1891.	Machinery.				
Clarke, Chapman & Co. (Gateshead).	1891.	Machinery.				
Dobson, Wm., & Co. (Low Walker).	1891.	Hulls only.				
Donkin & Nichol ...	1891.	Machinery.				
Dunston Engine Works Co.	1891.	Machinery.				
Dunston-on-Tyne Shipbuilding Co.	1891.	Hulls only.				
Edwards Shipbdg. Co. (Howden).	1891.	Hulls only.				
Hawthorn, R. & W., Leslie & Co. (Hebburn, St. Peter's, and Forth Banks).	1891.	Hulls and machinery.				50-ton crane, Hebburn.
Joicey, J. & G. (Forth Banks).	1891.	Machinery.				
North Eastern Marine Engineering Co. (Wallsend).	1891.	Machinery.				
Palmer's Shipbuilding and Iron Co. (Jarrow).	1891.	Hulls and machinery.				100-ton shears.
Richardson (Wigham) & Co. (Low Walker).	1891.	Hulls and machinery.				
Schlesinger, Davis & Co. (Wallsend).	1891.	Hulls only.				
Scotswood Shipbdg. Co. (Scotswood).	1891.	Hulls only.				
Scott, Ernest, & Mountain (Close Works).	1891.	Machinery.				
Smith, John, & Sons (Phoenix Foundry).	1891.	Machinery.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sl'gs.	Neaps
Newcastle-on- Tyne, England. (Continued.)	1892.	Anderson, Johnson, & Lit- tlejohn: St. Lawrence Patent Slip. (250 tons)	200	100 (cradle)	35	F'd, 9; aft, 12.		
	1892.	John Lindsay: St. Anthony's Patent Slip. (200 tons)	300	.....	40	10		
	1892.	Tyne General Ferry Co.: St. Peter's Patent Slip.... (200 tons)	310	.....	.....	.....
Sunderland, England.	1891.	River Wear Commissioners: No. 1 No. 2	443½	.....	50½	19½	14½	11
			357½	350	60	16½		
	1891.	James Laing: Cornhill Dry Dock	400	390	44	16½		
			300	300	45	15		
	1891.	Robt. Thompson & Sons: Bridge Dry Dock	320	315	48	15½		
	1891.	S. P. Austin & Son: Wear Dry Dock	315	300	45	15½		
	1891.	Strand Slipway Co.: Patent Slip (1,000 tons)...	600	230 (cradle)	40	.....	
	1891.	John Wigham: Hylton Patent Slip	330	150 (cradle)	42	F'd, 8; aft, 14.		
	1891.	Londonderry Patent Slip (Seaham, 6 miles distant).	180	78 (cradle)	.....	F'd, 9; aft, 10.		
	1891.	Londonderry Gridiron..... (Seaham.)	190	.....	40	.....	
	Hartlepool, and West Hartlepool, England.	1891.	W. Gray & Co., lessees: No. 1 (Jackson) .. No. 2 (Swainson)	375	340	60	15	15	11½
350				325	50	16		
1891.		Irvine & Co., lessees: No. 3	315	.....	47	15		
1891.		North Eastern Ry. Co.: No. 4	570	540	50	19		
			156	.....	.....	.....
Middlesborough, England.	1892.	Commercial Graving Dock (Tees Commissioners.)	576	.....	50	15½	13	10½
	1892.	Hydraulic Slip (1,500 tons) (Raylton Dixon & Co.)	400	.....	46	16		
	1892.	East Slipway (1,000 tons).... (W. Harkness & Son.)	400	220 (cradle)	40	.....	

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Spencer, John, & Sons (Newburn Steel Works).	1891.	Heavy forgings.				
Stephenson, Robt., & Co. (Hebburn).	1891.	Hulls and machinery.				
Swan, C. S., & Hunter (Wallsend).	1891.	Hulls only.				
Tyne Iron Shipbdg. Co. (Willington Quay).	1891.	Hulls only.				
Tyne Pontoons and Dry Docks Co. (Wallsend).	1891.	General repairs.				
Wallsend Slipway and Engineering Co.	1891.	Machinery built; hulls repaired.				80-ton sheers.
Wood, Skinner & Co. (Bill Quay).	1891.	Hulls only.				
Allan, W., & Co. (Scotia Engine Works).	1891.	Machinery.				60-ton sheers at No. 2 Dock.
Austin, S. P., & Son.	1891.	Hulls only.				
Bartrao, Haswell & Co.	1891.	Hulls only.				
Blumer, J., & Co.	1891.	Hulls only.				
Clark, George (Southwick Engine Works).	1891.	Machinery.				
Dickinson, John (Palmer's Hill Engine Works).	1891.	Machinery.				60-ton crane.
Doxford, Wm., & Sons.	1891.	Hulls and machinery.				
Laing, James	1891.	Hulls only.				
North Eastern Marine Eng'g Co.	1891.	Machinery.				
Osbourne, Graham & Co.	1891.	Hulls only.				
Pickersgill, Wm., & Sons.	1891.	Hulls only.				
Pier Engine Works.	1891.	Machinery.				
Priestman, J., & Co.	1891.	Hulls only.				
Short Bros.	1891.	Hulls only.				
Strand Slipway Co.	1891.	Hulls only.				
Sunderland Shipbuilding Co.	1891.	Hulls only.				
Thompson, Joseph L., & Sons	1891.	Hulls only.				
Thompson, Robert, & Sons,	1891.	Hulls only.				
Wigham, John	1891.	Machinery.				
Furness, Withy & Co. (West Hartlepool).	1892.	Hulls only.				All the dry docks are at West Hartlepool, and are owned by the North Eastern Railway Co.; 60-ton sheers at No.4 Dry Dock; 80-ton and 40-ton sheers in docks.
Gray, W., & Co. (Central Marine Eng'g Works, West Hartlepool).	1891.	Hull- and machinery; heavy forgings.				
Irvine & Co. (West Hartlepool).	1891.	Hulls only.				
Richardson, T., & Sons (Hartlepool).	1891.	Machinery.				
Blair & Co. (Stockton).	1891.	Machinery.				60-ton sheers, Middlesborough Docks, owned by North Eastern Ry. Co.
Craggs, R., & Sons	1891.	Hulls only.				
Craig, Taylor & Co. (Stockton).	1891.	Hulls only.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordina- ry springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Middlesborough, England. (Continued.)	1892.	Cleveland Patent Slip (650 tons); R. Craggs & Sons.	500	230 (cradle)	40			
	1892.	Commissioners' Patent Slip.	210		40			
Whitby, England.	1891.	Thos. Turnbull & Son: Whitehall	200		36½	9½	15	11½
		Boghill	130		31½	9½		
	1891.	Whitby and Robin Hood's Bay Shipbdg. & G. D. Co.:						
		No. 1	110		31½			
		No. 2	106		31			
	No. 3	113		33½				
Hull, England.	1892.	Hull and Barnsley Railway and Dock Co.:					20½	16½
		No. 1	500		60	19		
	No. 2	550		65	2½			
	1892.	Hull Dock Co.:						
		No. 1	501	460	50	21		
	No. 2	420	400	35	18½			
	1892.	Hull Central Dry Dock and Engineering Works Co.			47½	21		
		Earle's Shipbuilding and Engineering Co.:						
	Patent Slips							
		No. 1 (1,500 tons)	750	270 (cradle)		F'd. 8; aft. 7½		
		No. 2 (1,800 tons)	700	260 (cradle)		F'd. 7½; aft. 17		
		No. 3 (2,000 tons)	750	302 (cradle)		F'd. 8½; aft. 8		
		No. 4 (2,500 tons)	800	350 (cradle)		F'd. 8½; aft. 18½		
		No. 5 (400 tons)	360	142 (cradle)		F'd. 10½; aft. 6½		
		No. 6 (400 tons)	360	142 (cradle)		F'd. 0; aft. 6½		
	1892.	Humber Iron Works: Patent Slip (1,500 tons)	426	293 (cradle)		F'd. 7; aft. 13		
	1892.	Union Dry Dock (Gibson & Son.)	214		48	14		
1892.	Sanderson's Dry Dock	170		33½	15			
1892.	The Grove's Dry Dock (Walker & Smith.)	163		36	14			
1892.	High St. No. 1 Dry Dock (John Smith & Co.)	150½		38	15			
1892.	Hunt & Fowler's Dry Dock	120		39	12			
1892.	South Bridge Dry Dock (J. Barton.)	112		30	14			
Goole, England.	1891.	Aire & Calder Navigation: Dry Dock	250		42½	10½	13	
		Patent Slip (200 tons)	180	73 (cradle)	30	F'd. 6; aft. 10½		
Grimsby, England.	1891.	M., S. and L. Railway Co.:					19½	15½
		No. 1	400	350	70	20		
		No. 2	400	390	30	18½		
		No. 3		143	30	12		
		Patent Slip (250 tons)	321		25	8½; 14½		
Gridiron	215				15			
Boston, England.	1892.	Gridiron (for vessels of 300 tons register).	110			13		
	1892.	Patent Slip (50 tons) (C. Thompson.)	200	84 (cradle)	32	F'd. 8; aft. 12.		

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
King's Lynn, England.	1892.	West Lynn Patent Slip (not in working order).	300	50
Great Yarmouth, England.	1891.	J. H. Fellows & Son:					6	4½
		No. 1	170	40	12		
	No. 2 (in 2 sections) ..	230	.....	40	12		
	1891.	Beeching Bros.:						
No. 1	148	.....	32½	11			
No. 2	105	.....	27	10½			
Lowestoft, England.	1891.	Great Eastern Railway Co.:					6½	5½
		Dry Dock	240	47½	15½		
Patent Slip (200 tons).	330	81 (cradle)	30	13½; 14.				
Harwich, England.	1891.	Patent Slip (500 tons)	140	35	F'd. 8; aft. 12.	11½	9½
Ipswich, England.	1891.	Patent Slip (800 tons)		140 (cradle)	30
	1891.	Patent Slip (500 tons)	132	30
Wivenhoe, England.	1891.	Gridiron	240
		Forrest & Son:					15	10
Dry Dock	205	.....	35	16			
Patent Slip (260 tons).	300	101 (cradle)	24	F'd. 7; aft. 14½.				
Tilbury, England.	1892.	London and India Docks Joint Committee:					18½	15
No. 1	875	.....	70	35			
No. 2	875	.....	60	30			
Gravesend, and Northfleet, England.	1892.	Alfred Tolhurst:					18½	15
Northfleet Dry Dock ..	650	.....	65	22			
Northfleet Patent Slip ..	500	.....	.....	.....	
(2,000 tons)								
London, England.	1892.	London and India Docks Joint Committee:					20½	17½
		Royal Albert, No. 1.	520	500	68	22		
	Royal Albert, No. 2.	428	408	68	22			
	1892.	Victoria Graving Dock Co.:						
	Hydraulic Pontoon Lift	409½	310	59½	.....		
	(5,000 tons)	(dock)	(lift)	.....			
	Pontoons, iron:							
	No. 7 (3,800 tons).	.....	322	59	.....		
	No. 8 (2,200 tons).	.....	280	59	.....		
	No. 2 (1,500 tons).	.....	240	54	.....		
	No. 3 (1,180 tons).	.....	200½	56	.....		
	No. 4 (1,180 tons).	.....	200½	56	.....		
	1892.	London Graving Dock Co.:						
	West India Dry Dock	464	460	63	23			
	Orchard House, Blackwall	280	.....	55	17		
	1892.	Thames Iron Works:						
	Upper	460	430	65	24			
	Lower	335	.....	46	21		
	1892.	Poplar Dock, Cubitt Town (Kenneth B. Brown & Co.)	390	52½	20½		
	1892.	Cubitt Town Dry Dock	362	50	20		
(Rait & Gardiner).								
1892.	Green, R. & H., Blackwall:							
Granite, new ..	410	.....	65	23			
Upper yard ..	342	.....	62	17½			
1892.	Canal Docks, Blackwall (John Stewart & Son):							
Lower	290	268½	60½	18½				
Upper	238	.....	49½	16½			
1892.	Britannia Dock, Millwall ..	300	241½	40½	16			
(Lindwall & Co.)								

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1891.					Wooden shipbuilding carried on.
	1891.					Wooden shipbuilding carried on.
	1891.					Wooden shipbuilding carried on.
	1891.					Wooden shipbuilding carried on.
Forreast & Son	1891.	Hulls only.				
						Tilbury Dry Docks, can be divided by caissons into sections of 550 and 300 ft., 500 and 300 ft., or 450 and 400 ft. 50-ton floating steam crane in Tilbury Docks.
Butchard's Works (Gravesend).	1892.	Machinery.				80-ton sheers and 20-ton crane at Northfleet Dock.
Sandford, E. A. & H. (Gravesend).	1892.	Machinery.				
Apploby Bros (East Greenwich).	1892.	Machinery.				In the Royal Albert Docks, there are 50-ton and 30-ton floating steam cranes, and 80-ton sheers; in Victoria Docks, there are 60-ton sheers; in Millwall Docks, there are 80-ton sheers.
Braby, F., & Co.	1892.	Small hulls only.				
East Greenwich Co. (Millwall).	1892.	Machinery.				
Edwards & Symes (Cubitt Town).	1892.	Hulls only.				
Fletcher, G., & Co. (Poplar Iron Works).	1892.	Machinery.				
Fletcher (Henry), Son & Fearnall (Limehouse).	1892.	Hulls only.				
Forreast & Son (Limehouse).	1892.	Hulls only.				
Green, R. & H. (Blackwall).	1892.	Hulls only.				
Gwynne, J. & H. (Hammersmith Iron Works).	1892.	Machinery.				
Humphrys, Tenant & Co. (Deptford).	1892.	Machinery.				
Mandsley, Sons & Field (East Greenwich).	1892.	Machinery.				
Penn, J., & Sons (Greenwich, and Deptford).	1892.	Machinery.				
Rennie, J. & G. (Greenwich).	1892.	Hulls only.				

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
London, England. (Continued.)	1892.	Millwall Dry Dock (R. B. Salisbury.)	341		43	18		
	1892.	Millwall, inner (Rait & Gardiner.)	450	425	05	25		
	1892.	Millwall Gridiron	200			11		
	1892.	Regent Dry Dock, Millwall (Glengall Iron Works.)	283½		50	20½		
	1892.	Regent Gridiron	260					
	1892.	Union Dry Docks, Lime- house (Henry Fletcher, Son & Fearnall):						
		Upper.	334		46½	18½		
		Middle.	352	331½	44½	19½		
		Lower.	231	219½	52	15		
	1892.	Limekiln Docks, Limehouse (Robt. Amor & Co.):						
		Lower.	356		55	20		
		Upper.	190		57	16		
	1892.	Limehouse Dry Dock (Robinson, Dodd & Co.)	262		48½	19		
	1892.	Bridge Dry Dock, Lime- house (C. Dawson & Son.)	237		38½	17		
	1891.	Rateliff Dry Dock (J. F. Gibb & Co.)	224		41	15		
	1890.	New Crane Dry Dock	403½		43½	14½		
	1892.	Fountain Dry Dock, Ber- mondsey (Mills & Knight.)	161		47½	14½		
	1892.	Fountain Gridiron	280			14		
	1892.	Bull Head Dry Dock, Rother- hithe (R. Jarvis & Co.)	297		38	15½		
	1892.	Prince's Dry Dock, Rother- hithe (C. Crouch & Co.)	255		42½	17		
	1891.	King and Queen Dry Dock (Rotherhithe.)	195		38	17½		
	1892.	Globe Docks, Rotherhithe:						
		Upper (Stewart & Son).	182		41½	16		
		Lower (J. West).	172		39½	16		
	1892.	Horse Ferry Dock, Rother- hithe (J. McDowall & Co.)	225		42	18		
	1892.	Nelson Dry Dock, Rother- hithe (Mills & Knight.)	318		50	19½		
	1892.	Nelson Patent Slip (600 tons) (Mills & Knight.)	202					
	1892.	Commercial Dock, Rother- hithe (John Brodie & Co.)	310		54	15½		
	1892.	Clyde Dock, Rotherhithe (Lindwall & Co.)	198		48	16		
	1892.	Metropolitan Dock, Deptford (Gen. Steam Nav. Co.)	320		38	14½		
	1892.	Metropolitan Gridiron	192			14		
	1892.	Deptford Green Dry Dock (Tyne Dock Eng'g Co.)	417		03	23		
	1892.	Blackwall Point Dry Dock, East Greenwich (South Metropolitan Gas Co.)	475		00	21		
Chatham, England.	1891.	H. B. M. Dockyard:					18	14½
		No. 1	225	209½	57½	16		
		No. 2	408½	384½	65	23½		
		No. 3	363½	336½	63½	23½		
		No. 4	253	232	62½	21		
		No. 5	456½	416	80	31½		
		No. 6	456½	416	80	31½		
		No. 7	457½	416	82	32		
		No. 8	457½	416	82	32		
		North Lock	{ K } 477½	{ 436	{ 94½	{ 32		
			{ M }		{ 33½			
		South Lock	{ I } 479½	{ 438	{ 84½	{ 33		
			{ L }					
		Sheerne s, England.	1891.	H. B. M. Dockyard:				
No. 1	281½			268½	57½	25½		
No. 2	251½			230½	57½	25½		
No. 3	280½			268½	63½	25½		
No. 4	203½			177½	50½	19½		
No. 5	187			176	68½	14½		

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Robertson, A. & W., & Co. (Custom House Engine Works, Victoria Docks).	1892.	Machinery.				
Samuda Bros. (Isle of Dogs).	1892.	Hulls only.				
Stewart, John, & Son (Blackwall Iron Works, Isle of Dogs).	1892.	Hulls and machinery.				
Thames Iron Works and Shipbuilding Co. (Blackwall).	1892.	Hulls and machinery.				60-ton sheers.
Thornycroft, John L., & Co. (Chiswick).	1892.	Hulls and machinery.				
Victoria Dock Co. (Victoria Docks).	1892.	Hulls only.				
Walker, W. (Rotherhithe, and Poplar).	1892.	Hulls only.				
Westwood, Baillie, & Co. (Isle of Dogs).	1892.	Hulls only.				
Willans & Robinson (Thames-Ditton).	1892.	Machinery.				
Wilson, Alex., & Co. (Vauxhall Iron Works).	1892.	Machinery.				
Yarrow & Co. (Isle of Dogs).	1892.	Hulls and machinery.				
H. B. M. Dockyard	1831.	Hulls and machinery.				No. 1 is no longer used as a dock. There is a 250-ton crane at this dockyard.
H. B. M. Dockyard	1891.	Hulls and machinery.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Ramsgate, England.	1891.	Patent Slip (500 tons)..... (Board of Trade.)	500	130 (cradle)	.....	F'd, 9; aft, 11.	15	12
Dover, England.	1892.	Patent Slip (800 tons)..... (Wellington Dock.)	600	280 (cradle)	57	13½	18½	15
Folkestone, England.	1891.	Gridiron	181	.....	.....	8	20	16½
	1891.	Slipway (600 tons)	450	.....	.....	.....	.....	.....
Newhaven, England.	1891.	London, Brighton and South Coast Railway Co.: Gridiron	217½	.....	.....	.....	20	15
		Patent Slip (500 tons)	125	.....	.....	.....	.....	.....
Shorham, England.	1891.	Stow & Son: Adur Patent Slip ... (650 tons)	600	160 (cradle)	54	F'd, 10; aft, 13.	18	13½
		Southwick Gridiron	152	.....	.....	15	.....	.....
Portsmouth, and Gosport, England.	1891.	H. B. M. Dockyard:					13½	10½
		No. 1	253½	228½	57½	19½	.....	.....
		No. 2	252½	221½	63½	23½	.....	.....
		No. 3	287	275½	67½	25½	.....	.....
		No. 4	286½	279½	67½	25½	.....	.....
		No. 5	230½	209½	55½	19½	.....	.....
		No. 6	220	189½	53	19½	.....	.....
		No. 7 } Double Dock ...	658	648½	{ 80½	27½	.....	.....
		No. 10 }	.....	.....	{ 88½	27½	.....	.....
		No. 8	340	307	70	22½	.....	.....
		No. 9 (not used as a dock) ..	304½	.....	65	.....	.....	.....
		No. 11	427	401½	70	27½	.....	.....
		No. 12	456	415	80	33½	.....	.....
		No. 13	456	416	82	33½	.....	.....
		No. 14 (see Remarks) .H	.....	.....	82	33½	.....	.....
		No. 15 (see Remarks) .G	.....	.....	82	33½	.....	.....
		Deep Dock	452	428	82	41½	.....	.....
		North Lock	{ B } 466	458	82	{ 42½	.....	.....
			{ E }	.....	.....	{ 33½	.....	.....
		South Lock	{ C } 466	458	{ 82	41½	.....	.....
			{ F }	.....	.....	{ 33½	.....	.....
	1891.	J. Read, jr., Portsmouth: Camber Dry Dock	349½	.....	50	17½	.....	.....
		Camber Patent Slip	500	150 (cradle)	.....	12	.....	.....
		Gridiron	100	.....	.....	7	.....	.....
	1891.	J. T. Crampton (Albion Ship- yard):						
		Patent Slip, No. 1 .....	.....	128 (cradle)	.....	F'd, 5; aft, 9½.	.....	.....
		Patent Slip, No. 2 .....	.....	72 (cradle)	.....	F'd, 5; aft, 7.	.....	.....
	1891.	Camper & Nicholson, Gos- port:						
		South Patent Slip	400	130 (cradle)	.....	F'd, 10; aft, 16.	.....	.....
		North Patent Slip	150	66 (cradle)	.....	F'd, 7; aft, 12.	.....	.....
Southampton, England.	1891.	Southampton Dock Co:					13	9½
		No. 1	418	400	66	21	.....	.....
		No. 2	280½	250	51	15	.....	.....
		No. 3	523	500	80	25	.....	.....
		No. 4	478½	450	56	25	.....	.....
	1891.	Day, Summers & Co.: Patent Slip (1,000 tons) ..	620	222 (cradle)	.....	F'd, 11; aft, 17.	.....	.....
		Patent Slip (600 tons) ..	430	160 (cradle)	.....	F'd, 9; aft, 14.	.....	.....
	1891.	Southampton Naval Works: Patent Slip (400 tons) ..	450	.....	50	.....	.....	.....
	1891.	Napier & Son: Crosshouse Patent Slip ..	320	150 (cradle)	.....	7 (head)	.....	.....
	1891.	J. Dible & Sons: Slipway, for vessels of 200 tons register.	400	84 (cradle)	.....	F'd, 6; aft, 10.	.....	.....

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
						40-ton crane.
						50-ton sheers, 110 ft. high.
H. B. M. Dockyard ..	1891.	Hulls and machinery.				Nos. 14 and 15 are entrances only; docks not yet constructed.
Vosper & Co	1891.	Hulls (small) and machinery.				
Day, Sammers & Co. (Northam Iron Works).	1891.	Hulls and machinery.				60-ton and 30-ton sheers; 100-ton sheers in Southampton Docks.
Napier & Son	1891.	Machinery.				
Southampton Naval Works.	1891.	Hulls and machinery.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Cowes, Isle of Wight, England.	1891.	J. S. White: Medina Dry Dock		270	56	16	12½	9½
		(West Cowes.) Medina Patent Slip	300	100 (cradle)	40	F'd, 7½; aft, 12.		
		Falcon Slip (East Cowes). (600 tons)	337	124 (cradle)	40	F'd, 7½; aft, 13.		
	1891.	G. H. Marvin: Czarina Patent Slip	440	170 (cradle)			17	
		Bianca Patent Slip	350	100 (cradle)				
	1891.	C. Hanson & Sons: Patent Slips— Minerva (E. Cowes)	700	160 (cradle)	40			
		Point (W. Cowes): No. 1 (500 tons)	350	110 (cradle)	30			
		No. 2 (200 tons)	275	80 (cradle)	24			
		Gridirons (E. Cowes): No. 1	110					
		No. 2	90					
		No. 3	70					
1891.	W. White & Son (West Cowes): Patent Slip (400 tons)	320	93 (cradle)		F'd, 8; aft, 13½.			
1891.	Inman & Co. (E. Cowes): Patent Slip (100 tons)	250		25				
	Gridiron	100						
Portland, England.	1892.	Great Western Railway Co. (Weymouth): Alexandra Patent Slip	134	95 (cradle)	26	F'd, 6; aft, 10.	6½	4½
		Patent Slip (300 tons)	180	106 (cradle)		F'd, 4; aft, 7½.		
Topsham, England.	1891.	Topsham Dry Dock	186		32½	10	11½	8½
Dartmouth, England.	1892.	Gridirons				14	14½	10½
Plymouth, England.	1891.	Great Western Dry Dock	464		80	22	15½	11½
		(Great Western Ry. Co.) Great Western Pontoon	300			18		
	1891.	Queen Anne Dry Dock	242		50	12½		
		(D. Banks & Co.) Cattewater P. Slip (600 tons). (W. S. Kelly)	300	125 (cradle)	35			
	1891.	Sutton Floating Dock	144		37	11		
		(W. H. Shilston.) Sutton Patent Slip (400 tons). (Chas. Gent.)	350	118 (cradle)				
Devonport, and Keyham, England.	1891.	H. B. M. Dockyards: Devonport— No. 1 (Basin)	305½	303½	65	27½	15½	12
		No. 2 (New Long)	460½	438½	73	32		
		No. 3 (New)	424½	416	94	35½		
		No. 4 (North)	273½	263½	64½	19½		
		Keyham— No. 1 (South)	366½	355	80	25½		
		No. 2 (Middle)	318½	303½	80	22½		
		No. 3 (Queen's)	429	425	80	26½		
		Entrance Lock	264½	264½	80	35½ 33½		

the following *European Station ports*.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Guy, J	1891.	Machinery.				
White, J. S	1891.	Hulls (small), and machinery.				
White, W., & Son	1891.	Hulls (small), and machinery.				
Simpson, Strickland & Co.	1891.	Machinery.				
Bickle & Co	1891.	Hulls and machinery.				
Welch & Co	1891.	Machinery.				
Willoughby Bros. (Central Foundry and Engine Wks.)	1891.	Hulls and machinery.				
H. B. M. Dockyards	1891.	Hulls and machinery.				

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Falmouth, England.	1891.	Falmouth Dock Co.:					16	12
		No. 1	350	.....	50	14½	
	No. 2	537	.....	71	21		
	1891.	Bar Patent Slip (280 tons) ...	100	.....	25		
1891.	Little Falmouth Slip (300 tons)	112	.....	27			
Fenzeance, England.	1891.	Dry Dock (for sale)	250	40	12½	16½	12½
Appledore, England.	1892.	R. Clegg & Sons:					23	16½
		Richmond Dry Dock	323	313	42½	16		
		Newquay Dry Dock	270	260	42½	15		
		Gridiron	200			15		
Patent Slip (300 tons)	310	106 (cradle)		F'd. 7; aft. 11.				
Bristol, England.	1892.	Albion Dry Dock	522	42½	14½	31½	
	(C. Hill & Sons.)							
	1892.	Great Western Dry Dock	325	48	12½		
	(Wapping Dock Co.)							
	1892.	Stothert's Dry Dock	305	57	14½		
	(G. K. Stothert & Co.)							
1892.	Limekiln Dry Dock	150	.....	33	11½		
(Jefferies & Co.)								
1892.	Bristol Gridiron	260	.....	41			
(Bristol Corporation.)								
1892.	Patent Slip (250 tons) (Bristol Corporation.)	265	97 (cradle)					
Sharpness, and Gloucester, England.	1891.	Sharpness, new	350	50	15		
	1891.	Gloucester, new	180	35½	11½		
	1891.	Gloucester, old	120	29½	10½		
Newport, England.	1891.	Alexandra Dry Dock	532	515	50	20		
	(Alexandra Dock Co.)							
	1891.	Eastern Dry Dock	380	57½	25½		
	(Lang & Williamson.)							
	1891.	Mordey, Carney & Co:						
	No. 1	350	.....	50	24½		
No. 2	300	289	46½	21				
No. 3	222	.....	36	15			
1891.	Gridiron (River Usk)	250	.....		15		
Cardiff, Wales.	1891.	Bute Docks Co.:					37½	29
	Commercial Dry Dock	600	580	60	23½			
	Channel Gridiron	350	.....		23½		
	1891.	Bute Shipbdg., Eng'g and Dry Dock Co.	600	.....	55	23	
	1891.	Mt. Stuart Shipbdg., Gra- ving Docks and Eng'g Co.:						
	No. 1	440	.....	32	26		
	No. 2	420	.....	52	26		
	1891.	Cardiff Junction Dry Dock and Eng'g Co.	420	.....	50	17	
	1891.	Hill's D. D. and Eng'g Co.:						
	No. 1	408	.....	48	19		
	No. 2	399	.....	45	19		
	No. 3	235	.....	40	12½		
	1891.	Canal Dry Dock (T. Hodge)	140	.....	27½	12	
	1891.	Pontoon Dock (3,500 tons) (Wallsend Pontoon Co.)	360	.....		20	
	1891.	Floating (4,500 tons) building (Dumfries Dry Dock and Eng'g Co.)	500	.....	70		
	1891.	Windsor Slipways, D.D. and Eng'g Co., Grangetown:						
Patent Slip (5,000 tons)	900	320 (cradle)		18; 28.				
Patent Slip (3,500 tons)	900	320 (cradle)		18; 28.				
Gridiron	480	.....		20; 25.			

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Cox & Co	1891.	Hulls and machinery.				45-ton and 40-ton cranes.
Falmouth Dock Co ..	1891.	General repairs.				
Lean, W. H.	1891.	Hulls and machinery.				
Sara & Burgess	1891.	Machinery.				
Harvey & Co., Hayle (about 10 miles distant by rail).	1891.	Engine repairs; large.				Wooden shipbuilding carried on.
	1891.					
Hill, C., & Sons (Albion Dockyard).	1891.	Hulls and machinery.				The dry docks, opening into the floating harbor, are unaffected by tides.
Jefferies & Co	1891.	Machinery.				
Newall & Co	1891.	Hulls and machinery.				
Payne, J. (Vauxhall Works).	1891.	Hulls and machinery.				
Sisson, W., & Co., (Quay St. Iron Works).	1891.	Machinery.				
Stothert, G. K., & Co.	1891.	Hulls and machinery.				
Fielding & Platt (Gloucester).	1891.	Machinery.				Dry docks, opening into wet docks maintained at level of ship canal, are unaffected by tides.
Summers & Williams (Gloucester).	1891.	Machinery.				
Laurie, L. G., & Co. Mordey, Carney & Co.	1891.	General ..				50-ton sheers in Alexandra Docks; Alexandra Dry Dock, opening into the wet docks, is unaffected by tides.
	1891.	Hulls and machinery.				
Bute Shipbuilding, Eng'g and Dry Dock Co. (Cardiff, and Treherbert).	1891.	Hulls and machinery.				The dry docks in the Bute Docks are unaffected by tides.
Elliott & Jeffrey ..	1891.	Hulls and machinery.				
Hill's Dry Docks and Eng'g Co.	1891.	Hulls and machinery.				60-ton sheers.
Mount Stuart Shipbuilding, Graving Docks and Eng'g Co.	1891.	Hulls and machinery.				Facilities for casting propellers, up to 12 tons weight.
Shearman, John, & Co.	1891.	General repairs.				
Tydvil Eng'g and Ship Repairing Co.	1891.	Machinery.				
Tyneside Engine Works.	1891.	Hulls and engines.				
Wallsend Pontoon Co.	1891.	General repairs.				20-ton crane.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Noaps.
Penarth, Wales.	1891.	Penarth Shipbuilding and Ship Repairing Co.: Patent Slip (2,200 tons).....	870	300 (cradle)		F'd. 18. aft. 28.	37½	23
		Gridiron.....	384			26		
Barry, Wales.	1891.	Barry G. D. and Eng'g Co.: Double Dock.....	731½		60	30	37½	28½
		Barry Dock and Rys. Co.: Double Dock (unfinished).....	747½		63	26½		
Swansea, Wales.	1891.	Swansea D. D. and Eng. Co.: Albion Dock, double.....	480		42½	16	27	20
		Globe Dock.....	350		46	20		
		Central G. D. and Eng. Co.: Central Dock.....	350		47	21		
		Phoenix D. D. and Eng. Co.: Phoenix Dock.....	305		38	18		
		G. B. Menger & Co.: Villiers Dock.....	280		40	15		
		J. Lewis: Jersey Dock.....	270		45½	18		
		Harris Bros.: Cambrian Dock, No. 1.....	187		38	17		
		Cambrian Dock, No. 2.....	153		34	16		
Gridiron.....	300			15				
Llanelli, Wales.	1891.	Patent Slip (800 tons)..... (Samuel Bros.)	380	150 (cradle)	40	20	26	19
Milford Haven, and Pembroke, Wales.	1892.	Milford Dry Dock..... (Milford Dock Co.)	600		63½	34	24	18
		New Milford Gridiron (Great Western Ry. Co.)	250			15		
		Warlow's Dock, Pembroke. (G. R. Warlow).	215		44½	13½		
		Francis's Dock, Pembroke.....	185		38½	14		
		Govt. Dockyard, Pembroke: No. 1.....	404	387½	75	25		
Holyhead, Wales.	1891.	Alexandra Dry Dock..... (L. & N. W. Ry. Co.)	412	402	70½	20	16	12½
		Government Dry Dock.....	307		62½	14		
		Government Gridiron.....	350		50	14		
Amlwch, Wales.	1891.	Dry Dock (cut in rock)..... (W. Thomas & Sons.)	180		30	13½	18	13
Liverpool, England.	1891.	Langton Docks:					27½	20½
		No. 1 { Outer.....	448	}	60	21½		
		Inner.....	500					
		No. 2 { Outer.....	500	}	60	24½		
		Inner.....	448					
		Herculaneum Docks:						
		No. 1.....	758½	60	22½			
		No. 2.....	753	60	22½			
		No. 3.....	768	60	22½			
		Sandon Docks:						
		No. 1.....	565	60	22½			
		No. 2.....	565	70	22½			
		No. 3.....	565	60	22½			
		No. 4.....	565	70	22½			
		No. 5.....	565	45	22½			
No. 6.....	565	45	22½					
Clarence Docks:								
Outer, No. 1.....	451	45	19					
Inner, No. 1.....	289	45	(blocks) 16½					
Outer, No. 2.....	454	45	(blocks) 19					
Inner, No. 2.....	286	32½	(blocks) 17					
Gridiron.....	313½		(blocks) 20					

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Penarth Shipbuilding and Ship Repairing Co.	1891.	Hulls and machinery.				
Barry Graving Dock and Eng'g Co.	1891.	Hulls and machinery.				
Central Graving Dk. and Eng'g Co.	1891.	General repairs.				
Harris Bros. (Cambrian Docks).	1891.	General repairs.				
Lewis, J. (Jersey Dock).	1891.	General repairs.				30-ton sheers at the Jersey Dry Dock.
Meager, G. B., & Co. (Villiers Dock).	1891.	General repairs.				
Phoenix Dry Dock and Eng'g Co.	1891.	General repairs.				
Swansea Dry Dock and Eng'g Co.	1891.	General repairs.				60-ton sheers at the Globe Dry Dock.
Samuel Bros.	1891.	Hulls only.				
Castle Steel and Iron Works (Milford).	1891.	Hulls and machinery.				50-ton sheers.
Oswald, T. R., & Co. (Milford).	1891.	Hulls only.				
H. B. M. Dockyard (Pembroke).	1891.	Hulls only.				
	1891.					80-ton sheers. 90 ft. high at Alexandra Dry Dock.
Thomas, W., & Sons.	1891.	Hulls only.				
Evans, R. & J., & Co.	1891.	Hulls only.				The lengths given in the tables are as measured on dock floors. All of the docks are under the control of the Mersey Docks and Harbor Board. There are cranes of from 20 to 100 tons lifting power, and one 100-ton floating derrick.
Fawcett, Preston & Co. (Phoenix Foundry).	1891.	Machinery.				
Jones, John, & Sons.	1891.	Hulls and machinery.				
Liverpool Forge Co.	1891.	Hulls and forgings.				
Potter, W. H., & Sons.	1891.	Hulls only.				
Rollo, D., & Sons	1891.	Hulls and machinery.				
Roydon, T., & Sons.	1891.	Hulls				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.		
			Over all.	Over blocks.			Sp'gs.	Neaps	
Liverpool, England. (Continued.)	1891.	Canning Docks:	No. 1	436	35½	16 (blocks)			
			No. 2	482	35½	17½ (blocks)			
	1891.	Queen's Docks:	No. 1	465	42	20½			
			No. 2	467	70	20½ (blocks)			
	1891.	Brunswick Docks:	No. 1	460	42	21½			
			No. 2	462	42	18½ (blocks)			
	1891.	Huskisson Lock		395	80	24½ (blocks)			
	1891.	Prince's Dock		277½	45	20½ (blocks)			
	1891.	King's Pier Gridiron		500		18½			
	Birkenhead, England.	1891.	Mersey Dks. and Harb. Bd.:	No. 1	930	60			23½	27½	20½
No. 2				750	48½	26½			
No. 3				750	85	26½			
1891.		Laird Bros.:	No. 1	300	40	18½			
			No. 2	267	45	18½			
			No. 3	447	75	26			
			No. 4	410	85	22½			
			No. 5	409	85	22½			
1891.		Clover, Clayton & Co.:	No. 1	400	80	20			
			No. 2	220	34	16			
	No. 3		300	36	19				
	No. 4		370	42	17				
	No. 5		210	34	15				
	No. 6		400	80	20				
1891.	J. Harland		240	32	9				
Fleetwood, England.	1891.	Gridiron (John Gibson & Sons.)		310	50	14	27½	26½	
Lancaster, England.	1891.	Glasson Dock Shipyard (Nicholson & Marsh.)		197	187	35	13	8½	2
Barrow, England.	1891.	Furness Railway Co.:	Dry Dock	500		60	22	28	21
			Depositing Dock (3,000 tons)	242		40			
	1891.	Furness Shipbdg. Co.:	Patent Slip (300 tons)	250	132 (cradle)		F'd, 7; aft, 15.		
Whitehaven, England.	1891.	Patent Slip (1,200 tons) (Whitehaven Shipbdg. Co.)	250	200 (cradle)		F'd, 7½; aft, 10½.	26	19	
	1891.	Gridiron	200			14			
Workington, England.	1891.	Patent Slip (300 tons) (R. Williamson & Son.)	150	120 (cradle)	30	F'd, 5; aft, 12.	25½	20	
Maryport, England.	1890.	Patent Slip (1,200 tons) (Ritson & Co.)				F'd, 8½; aft, 20.	25	19	
	1891.	Gridiron (River Ellen)	260			15			
Campbeltown, Scotland.									
Ayr, Scotland.	1891.	Patent Slip (1,200 tons) (S. McKnight & Co.)	800	260 (cradle)	60 (slip)	F'd, 9½; aft, 13½.	8½	7½	
Troon, Scotland.	1891.	Ailsa Shipbuilding Co.:	No. 1	300		37½	11	7½	
		No. 2	225		24½	8			
Irving, Scotland.	1892.	None							

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Alison, J. Gordon ... Canada Works Eng'g & Shipbdg. Co. Clover, Clayton & Co. Cochran & Co	1892. 1890. 1891. 1891.	Machinery. Hulls and machinery. Hulls only. Hulls and machinery.	.....	.....	.....	25-ton cranes.
Dickinson, Wm Laird Bros	1891. 1891.	Small hulls. Hulls and machinery.	.....	.....	.....	50-ton crane at No. 4 Dock.
Thompson, T. W	1891.	Hulls only.	.....	.....	.....	Wooden shipbuilding carried on.
	1891.					Wooden shipbuilding carried on.
Naval Construction and Armaments Co. Waddington & Longbottom. Westray, Copeland & Co.	1891. 1891. 1891.	Hulls and machinery. Machinery. Machinery.	.....	.....	.....	100-ton and 35-ton cranes at the docks. Depositing Dock (of Clark & Standfield type) takes vessels 300 ft. long; it is provided with two gridirons.
Lowca Eng'g Co. (Parton).	1891.	Machinery.	.....	.....	.....
Williamson, R., & Son.	1891.	Hulls only.	.....	.....	.....
Ritson & Co Stanfield, Cuthell & Co. (Phoenix Foundry).	1891. 1891.	Hulls only. Machinery.	.....	.....	.....
Campbeltown Shipbuilding Co.	1891.	Hulls only.	.....	.....	.....
McKnight, S., & Co.	1891.	Hulls only.	.....	.....	.....	50-ton sheers.
Alisa Shipbuilding Co.	1891.	Hulls only.	.....	.....	.....	30-ton and 20-ton cranes.
Gilmour, John H	1892.	Small hulls.	.....	.....	.....

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Ardrossan, Scotland.	1892.	Ardrossan Shipbdg. Co.:						
		Dry Dock (cut in rock). Patent Slip (400 tons) ..	258 430	..... 160 (cradle)	39½ 38	15½ F'd, 7; aft, 12.	10	8
Greenock, Scotland.	1891.	Harbor Trust:						
		Garvel	635	.....	60½	20		
		East	360½	.....	38	12		
	West	223½	.....	34	9½			
1891.	Scott & Co.:							
	Dry Dock	360	.....	48	15			
	Patent Slip (350 tons) ..	500	100 (cradle)	40	F'd, 6; aft, 10.	10	8½	
1891.	Caird & Co.	238	.....	45	15			
1891.	Morris & Lorimer, Sandbank:	Holy Loch Patent Slip ..	500	170 (cradle)	.....	F'd, 4; aft, 11½.		
		(300 tons)						
Port Glasgow, Scotland.	1891.	Port Glasgow Dry Dock		325 (floor)	45	15		
Dumbarton, Scotland.	1891.	Dry Dock	300	.....	41	13	10½	
Glasgow, Scotland.	1891.	Clyde Navigation Trust:						
		Govan, No. 1		500 (floor)	72	22½	11½	0½
		Govan, No. 2		580 (floor)	67	22½		
		Govan, No. 3		900 (floor)	85	20		
	1891.	D. & W. Henderson & Co.:						
		Dry Dock (Partick)	500	.....	54½	18		
		Patent Slip (1,000 tons) ..	600	250 (cradle)	52	.....	
	1891.	A. & J. Inglis (Partick):						
		Patent Slip (2,000 tons) ..	850	270 (cradle)	57	F'd, 17; aft, 20.		
	1891.	John Shearer & Son (Kel- vinhaugh):	Patent Slip (1,000 tons) ..	400	230 (cradle)	53½	F'd, 7; aft, 14.	
Patent Slip (300 tons) ...			200	180 (cradle)	42	F'd, 5; aft, 8.		
1891.	Scott & Co. (Bowling):	Patent Slip (540 tons) ..	400	103 (cradle)	43	F'd, 9; aft, 12.		
		Patent Slip (150 tons) ..	250	70 (cradle)	26	F'd, 5½; aft, 9½.		

the following European Station ports.—Continued.

Shipyards, machine shops etc. having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Ardrossan Shipbdg. Co.	1891.	Hulls only.				
Caird & Co.	1891.	Hulls and machinery.				
Cooper, H. B., & Co.	1891.	Machinery.				
Kincaid & Co.	1891.	Hulls and machinery.				
Montgomery, R.	1891.	Machinery.				
Scott & Co.	1891.	Hulls and machinery.				
White, Wm., & Co.	1891.	Machinery.				
Blackwood & Gordon.	1891.	Hulls and machinery.				
Duncan, Robt., & Co.	1891.	Hulls only.				
Dunlop, David J., & Co.	1891.	Hulls and machinery.				
Hamilton, Wm., & Co.	1891.	Hulls only.				
Murdoch & Murray.	1891.	Hulls only.				
Reid, John, & Co.	1891.	Hulls only.				
Rodger, A., & Co.	1892.	Hulls only.				
Russell & Co.	1891.	Hulls only.				
Denny, Wm., & Bros.	1891.	Hulls and machinery.				100-ton shears.
McMillan, A., & Son.	1891.	Hulls only.				20-ton crane.
Murray Bros.	1891.	Hulls only.				
Paul, Mathew & Co.	1891.	Machinery.				
Abercorn Shipbuilding Co. (Paisley).	1891.	Hulls only.				Clyde Navigation Trust have 75-ton, 60-ton, 50-ton, 40-ton, and 30-ton cranes.
Alloy & Maclellan (Polmadie).	1891.	Machinery.				
Anderson & Lyall (Govan).	1891.	Machinery.				
Barclay, Curle & Co. (Whiteinch, and Stobercross).	1891.	Hulls and machinery.				
Bow, McLachlan & Co. (Paisley).	1891.	Hulls and machinery.				
Burnet (Lindsay) & Co. (Govan).	1891.	Hulls and machinery.				
Burrell & Son (Port Dundas).	1891.	Hulls only.				
Cameron, Mills & Co.	1891.	Machinery.				
Campbell & Calderwood (Paisley).	1891.	Machinery.				
Connell, Chas., & Co. (Whiteinch).	1891.	Hulls only.				
Craig, A. F., & Co. (Paisley).	1891.	Machinery.				
Dunsmuir & Jackson (Govan).	1891.	Machinery.				
Fairfield Shipb'dg and Eng'g Co. (Govan).	1891.	Hulls and machinery.				80-ton shears.
Ferguson, Thos., & Son (Parkhead).	1891.	Machinery.				
Fisher & Co. (Paisley).	1891.	Machinery.				
Fleming & Ferguson (Paisley).	1891.	Hulls and machinery.				
Fullerton, John, & Co. (Paisley).	1891.	Hulls only.				
Gilmour, John, & Co. (Paisley).	1892.	Machinery.				

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Glasgow, Scotland. (Continued.)								
Stornoway, Island of Lewis, Hebrides.	1891.	Patent Slip (700 tons)..... (A. McKenzie.)		140 (cradle)	24	F'd. 10; aft. 13.	13½	9½

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Hanna, Donald & Wilson (Paisley).	1891.	Machinery.				
Harvey, Robt., & Co. (Parkgrove Wks.)	1891.	Machinery.				
Haythorn & Stuart (Eastwood Engine Works).	1891.	Hull and engine repairs.				
Henderson, D. & W., & Co. (Partick).	1891.	Hulls and machinery.				50-ton and 20-ton cranes.
Howden, Jas., & Co.	1891.	Machinery.				
Hume, Jas. S., & Co.	1891.	Machinery.				
Hutcheson, Archbd.	1891.	Machinery.				
Hutson & Corbett (Kelvinhaugh).	1891.	Machinery.				
Inglis, A. & J. (Partick.)	1891.	Hulls and machinery.				80-ton sheers; 20-ton crane.
Kemp, Wm. (Govan).	1891.	Machinery.				
King, Wm., & Co.	1891.	Machinery.				
Lees, Anderson & Co.	1891.	Machinery.				
Lobnitz & Co. (Renfrew.)	1891.	Hulls and machinery.				
London & Glasgow Engineering and Iron Shipbdg. Co.	1891.	Hulls and machinery.				
McArthur, J., & Co. (Paisley).	1891.	Hulls only.				
Mackie & Thomson (Govan).	1891.	Hulls only.				
Marriott & Graham (Govan).	1892.	Machinery.				
Mechan & Son	1891.	Machinery.				
Muir & Caldwell	1891.	Machinery.				
Muir & Houston	1891.	Machinery.				
Napier, Robt., & Sons.	1891.	Hulls and machinery.				
Napier, Shanks & Bell (Yoker).	1891.	Hulls only.				
Neilson, Jas., & Son.	1892.	Machinery.				
Nicholson, Alex., & Co. (Crownpoint Works).	1891.	Machinery.				
Pringle & Morrison	1892.	Machinery.				
Reid, Thos., & Sons (Paisley).	1891.	Machinery.				
Ross & Duncan (Govan).	1891.	Machinery.				
Rowan, D., & Son.	1891.	Machinery.				
Scott & Co. (Bowling).	1891.	Hulls.				
Scott, Thos., Sons & Watts.	1891.	Machinery.				
Seath, Thos. B. (Rutherglen).	1891.	Hulls only.				
Shearer, John, & Son (Kelvinhaugh).	1892.	Hulls only.				
Simons, Wm., & Co. (Renfrew).	1891.	Hulls and machinery.				
Smith Bros. & Co.	1891.	Machinery.				
Stephen, Alex., & Sons (Govan).	1891.	Hulls and machinery.				
Stewart, Duncan & Co.	1891.	Machinery.				
Swan, Wm., & Co. (Maryhill).	1891.	Hulls only.				
Thomson, Jas & Geo. (Clydebank).	1891.	Hulls and machinery.				120-ton sheers.
Thomson, John & James.	1891.	Machinery.				
Walker, Henderson & Co.	1891.	Machinery.				
Wallace, Hugh, & Co.	1891.	Machinery.				
Weir, G. & J. (Cathcart).	1891.	Machinery.				
	1891.					Wooden shipbuilding carried on.

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Bigger, Chas. J. (Foyle Shipyard.)	1891.	Hulls only.				60-ton steam crane in harbor.
Rodgers, Paul, & Co.	1891.	Hulls only.				
Coates, Victor, & Co.	1891.	Machinery.				100-ton crane at Alexandria Dry Dock.
Grant, D. & W.	1891.	Machinery.				
Greenhill, J. H.	1891.	Machinery.				
Harland & Wolff.	1891.	Hulls and machinery.				
McIlwaine & McColl (Ulster Iron Works).	1891.	Hulls and machinery.				
Workman, Clark & Co.	1891.	Hulls only.				
	1891.					Wooden shipbuilding carried on.
Bewley, Webb & Co.	1891.	Hulls and machinery.				Entrance locks to Canal Dry Docks are 150 feet long (for Nos. 1 and 2) and 120 feet long (for No. 3).
Ross & Walpole.	1891.	Machinery.				
	1891.					
	1883.					One small machine shop.
H. B. M. Dockyard (Haulbowline).	1891.					80-ton sheers at Victoria Dry Dock, Passage West; 50-ton sheers at Harbor Commissioners' Yard, Cork; facilities for iron shipbuilding and repairing at Cork; several machine shops at Queentown.
	1888.					Facilities for ordinary repairs.

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None.....	1881.					
	1889.					No facilities for repairs to machinery; small repairs to hulls may be undertaken.
	1889.					Some facilities for strengthening vessels for ice navigation, and for small repairs to machinery.
	1889.					Facilities for small repairs to hulls and machinery.
None.....	1889.					
Norwegian Government Dockyard.	1889.	Small.....				30-ton sheers at dry docks.
Nidelvens Mekaniske Vaerksted.	1891.	Hulls only.				
Thronhjems Mekaniske Vaerksted.	1891.	Hulls and machinery.				
						Lengths of slips, 250, 210, 180, and 130 feet; 20-ton and 15-ton cranes.
Bergens Mekaniske Vaerksted.	1891.	Hulls and machinery; large.				In addition to the two establishments named, there are two small repair shops and several foundries.
Laxovaags Maskin & Jernskibbyggeri.	1891.	Hulls and machinery; large.				
Stavanger Stoberi & Dok (Foundry & Dock Co.)	1891.	Hulls and machinery.				The Foundry and Dock Co. builds vessels of about 500 tons, and undertakes repairs of considerable size; 18-ton crane.
Christiansands Mekaniske Vaerksted.	1891.	Hulls and machinery.				Small vessels are built, and all ordinary repairs undertaken.
	1886.					Facilities for minor repairs.
	1886.					Facilities for minor repairs.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Laurvig, and Frederikavaern, Norway.								
Sandefjord, Norway.	1891.	Floating, 2 sections: No. 1 (800 tons). No. 2 (500 tons).	142 108		45 45			
Tonsberg, Norway.	1891.	None						
Horten, Norway.	1891.	Norwegian Government.....	356½		61½	23½	No tides...	
	1891.	Carl Johansvaeru	344½		61½	23½		
Drammen, Norway.								
Christiania, Norway.	1891.	Akers Mek. Vaerksted: Dry Dock	268	247	43½	14½	No tides...	
	1891.	Nylands Mek. Vaerksted: Floating, 2 sections— No. 1 (1,500 tons). No. 2	230 150		47½ 47½	16½ 16½		
Moss, Norway.								
Frederikstad, Norway.								
Frederikshald, Norway.								
Frederikshavn, Denmark.	1891.	None						
Gothenburg, Sweden.	1892.	Motala Dry Docks Co.: Lindholmens Dock..... Patent Slips— No. 1 (500 tons). No. 2 (350 tons).	348 540 425	200 (cradle) 150 (cradle)	50 37 37	20 F'd, 9; aft. 20. F'd, 9; aft. 15.	No tides...	
	1892.	Goteborgs Mekaniska Werk- stads Aktiebolag: Two Patent Slips	528	200 (cradle)		F'd, 9; aft. 20.		
		(800 tons each.)						
Helsingborg, Sweden.	1892.	Helsingborg Dry Dock.....	276		46	16	No tides...	
Elsinore, Denmark.	1891.	Elsinore Dry Dock..... (Helsingors Jernskibs & Maskinbyggeri.)	335		44½	14	No tides...	
	1891.	Patent Slip (800 tons)	700	235 (cradle)		F'd, 8; aft. 18.		

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Government Dockyard (Frederiksvaern).	1890.					
	1886.					One machine shop; ordinary repairs.
	1886.					Engine-building works.
Government Dockyard.	1888.	Large, of all kinds.				30-ton shears.
	1886.					Excellent facilities for repairs to engines and boilers.
Akers Mekaniske Vaerksted.	1891.	Hulls and machinery; large.				50-ton shears; 75-ton floating derrick.
Nylands Mekaniske Vaerksted.	1891.	Hulls and machinery; large.				35-ton shears; 60-ton steam derrick.
Moss Jernstoberi & Mekaniske Vaerksted.	1891.	Hulls and machinery.				Small vessels built and engined, and all ordinary repairs undertaken.
Frederikstads Mekaniske Vaerksted.	1891.	Hulls and machinery.				Small vessels built and engined, and all ordinary repairs undertaken.
	1886.					One machine shop; ordinary repairs.
Eriksbergs Mekaniska Werkstads Aktiebolag.	1892.	Hulls and machinery.				
	1892.	Hulls and machinery.				40-ton crane.
Goteborgs Mekaniska Werkstads Aktiebolag.	1892.	Hulls only.				
Larason, P. (Thorskog.)	1892.	Hulls and machinery.				
Lindholmens Mekaniska Werkstads Aktiebolag.	1892.	Machinery.				
Lundby Mekaniska Werkstads Aktiebolag.	1891.	Hulls and machinery; large.				50-ton crane; 18-ton shears (Company dissolved, 1892.)
Motala Mekaniska Werkstads Aktiebolag.	1892.	Hulls and machinery.				
Thorskogs Mekaniska Werkstads Aktiebolag.	1892.	Machinery.				
Wilhelmsbergs Mekaniska Werkstads Aktiebolag.	1892.					Shipyards and mechanical works, in connection with dry dock, afford facilities for all ordinary repairs.
Helstingors Jernskibs & Maskinbyggeri.	1891.	Hulls and machinery; large.				45-ton shears.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Landskrona, Sweden.	1891.	None						
Copenhagen, Denmark.	1891.	Royal Dockyard:					No tides...	
		Dry Dock	263		59½	20½		
		Patent Slip (1,870 tons) ..	412					
	1891.	Floating (142 tons)	106½		27½			
	1891.	Garle Dry Dock	282		52	15½		
	1891.	Burmeister & Wain:						
		Patent Slips—						
		No. 1 (3,000 tons) ..	350		55			
	No. 2 (3,000 tons) ..	350		55				
	No. 3 (3,500 tons) ..	350		55				
1891.	Patent Slip (for vessels of 300 tons register) ..	135						
1891.	Patent Slip (for vessels of 200 tons register) ..	130						
Malmo, Sweden.	1891.	Harbor Commissioners	236½		34	12½	No tides...	
	1891.	Patent Slip (1,200 tons) .. (Kockums Mek. Werk.)	400	230 (cradle)	42			
Ystad, Sweden.	1891.	Patent Slip (500 tons)	250	175 (cradle)	30			
Ronne, Id. of Bornholm, Denmark.	1891.	Slipway, hand power (for ves- sels of 200 tons register) ..						
Karlskrona, Sweden.	1891.	Government Dockyard:					No tides...	
		Old ..	243½		49½	17½		
		No. 1 ..	182		50½	18½		
		No. 2 ..	253		50½	20		
		No. 3 ..	192		50½	20		
		No. 4 ..	203		50½	20		
No. 5 ..	203		50½	20				
Kalmar, Sweden.	1891.	Patent Slip (550 tons)	650	150 (cradle)	60 (slip)			
Oscarshamn, Sweden.	1891.	Oscarshamn Dry Dock	310		49	15	No tides...	
Westervik, Sweden.	1891.	Patent Slip (500 tons)	150		30			
Norrkoping, Sweden.	1891.	Dry Dock (Motala Co.)	233½		35	10	No tides...	
Slite, Id. of Gothland, Sweden.	1891.	None						
Stockholm, Sweden.	1891.	Government Dockyard:					No tides...	
		Dry Dock, stone	301½		58½	22½		
	1891.	Grosshandels Societeten:						
		East Dry Dock ..	340		56	18		
		West Dry Dock ..	330		36	13		
	1891.	Finnboda Patent Slip	800	225 (cradle)		F'd, 8; aft, 19.		
	1891.	Bergsunds Slip (Lake Malar) (300 tons) ..	488	136½ (cradle)		F'd, 9½; aft, 18.		
	1891.	Langholm Slips (L. Malar):						
		No. 1 (350 tons) ..	310	100 (cradle)		F'd, 9; aft, 12.		
	No. 2 (350 tons) ..	305	100 (cradle)		F'd, 5; aft, 7.			
1891.	Ekensberg Patent Slip	410						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Royal Dockyard....	1885.	Hulls built; machinery repaired.				75-ton and 45-ton sheers, and 35-ton crane at dockyard; 45-ton floating derrick in harbor.
Burmeister & Wain.	1891.	Hulls and machinery; large.	Large sizes turned; no facilities for heavy forging.			In addition to this establishment, which undertakes work of the largest class, there are several smaller repair shops.
Kockums Mekaniska Werkstads Aktiebolag.	1891.	Hulls and machinery.				
	1885.					One shipyard with some facilities for repairs to iron or steel hulls.
	1883.					One large machine shop.
Swedish Government Dockyard.	1885.	To hulls and machinery.				50-ton and 10-ton cranes.
	1885.					Facilities for minor repairs.
Oscarshamns Mekaniska Werkstads & Skeppsdockas Aktiebolag.	1892.	Hulls and machinery.				45-ton sheers.
	1886.					Facilities for minor repairs.
Motala Mekaniska Werkstads Aktiebolag.	1891.	Hulls and machinery.				30-ton sheers. (Company dissolved, 1892.)
Swedish Government Dockyard.	1891.	All ordinary repairs; small hulls built.				50-ton sheers.
Atlas Aktiebolag...	1891.	Machinery.				
Bergsunds Mekaniska Werkstads Aktiebolag.	1891.	Hulls and machinery.				26-ton sheers at Finnboda Patent Slip.
Bolinders, J. & C. G. Lindberg, W. (Werkstads & Warfs Akt.)	1891.	Machinery.				
	1891.	Hulls and machinery.				40-ton and 20-ton sheers.
Ludvigsbergs Werkstads Aktiebolag.	1891.	Machinery.				
Stockholm Towing Co. (Ekensberg).	1891.	Machinery.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Wjdt at en- trance.	Depth on sill. H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Oregrund, Sweden.								
Gefle, Sweden.	1892.	Atlas Patent Slip (1,000 tons) (O. A. Brodin.)	900	213 (cradle)	36½	F'ft. 8½ aft. 14½	No tides	
	1892.	Patent Slip (100 tons) (Korsnas Co.)	200	44 (cradle)		F'd. 5 aft. 6½		
Soderhamu, Sweden.	1891.	None						
Sundsvall, Sweden.	1891.	Sunds Brnk Patent Slip. (Sunds Aktiebolag.)	150		28			
Hernösand, Sweden.	1891.	Patent Slip (150 tons) (Hernösands Mekaniska Werkstads.)	250	80 (cradle)				
Bjorneborg, Russia.	1892.	Patent Slip (500 tons) (To be constructed.)						
Abo, Russia.	1891.	W. Crichton & Co.: Patent Slip (560 tons) Patent Slip (150 tons)	250 160		60 45			
Helsingfors and Sveaborg, Russia.	1891.	Helsingfors Dry Dock (Oskar Eklund.)	314	300 (floor)	56	19½		
Wiborg, Russia.	1891.	None						
Cronstadt, Russia.	1890.	Peter Dry Dock						
	1890.	Nicolai Dry Dock						
	1890.	Constantine Dry Dock						
	1890.	Floating, 5 sections (2,500 tons).	375					
	1890.	Patent Slip (400 tons)						
St. Petersburg, Russia.	1890.	Government Patent Slip						
Revel, Russia.	1891.	None						
Riga, Russia.	1891.	Patent Slip (for vessels of 1,200 tons register).	715					

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Brodin, O. A.	1891.	Hulls only.				40-ton sheers at Atlas Patent Slip.
Lindahl & Runer...	1891.	Machinery.				
Sjostrom, R.	1891.	Machinery.				
	1885.					One foundry with facilities for small repairs to machinery.
	1885.					One machine shop; facilities for repairs to machinery and to hulls above water.
Hernosands Mekaniska Werkstads Bolag.	1891.	Machinery.				Hull repairs above water line can be executed.
Bjorneborgs Mekaniska Werkstad.	1890.	Hulls only.				
Rosenlew, W., & Co..	1890.	Machinery.				
Crichton, W., & Co.	1891.	Hulls and machinery.				45-ton and 30-ton cranes.
Eklund, Oskar	1891.	All ordinary repairs.				50-ton crane.
Russian Government Dockyard (Sveaborg).	1888.	Small				
	1887.					One shipbuilding and mechanical establishment; facilities for minor repairs.
Russian Government Dockyard.	1885.	To hulls and machinery.				In addition, there are two private establishments.
Russian Government Dockyard.	1890.	Large, of all kinds.				
Aboukoff Steel Works.	1890.	Heavy forgings and castings.	Largest sizes forged.			50-ton steam hammer; 150-ton and 35-ton cranes.
Baltic Works	1890.	Hulls and machinery; large.				
Franco-Russian Co.	1890.	Hulls and machinery; large.				
	1885.					There are iron works, with some facilities for repairs to hulls and machinery.
Bolderaa Engine Works (Bolderaa).	1891.	All ordinary repairs.				20-ton crane at patent slip.
Felsch & Co.	1891.	Machinery only.				
Lange & Son.	1891.	Hulls and machinery.				
Mantel, R. H.	1891.	Hulls and machinery.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Libau, Russia.	1891.	None						
Memel, Germany.	1891.	Patent Slip (Government) ...	131		33	9		
	1891.	Patent Slip (500 tons)	150	55 (cradle)	40 (slip)	F'd, 9; aft, 12.		
Pillau, and Konigsberg, Germany.	1891.	Pontoon, Pillau (1,100 tons).. (F. Schichau, Elbing.)	150			11½		
Dantzic, Germany.	1888.	Imperial German Govt.: Sectional, iron (6,000 tons). (Neufahrwasser.) Masonry, small (dockyard)	322			18	No tides	
	1891.	J. W. Klawitter: Floating Dock, wood	245		48	10½		
		Patent Slip (550 tons)		215 (cradle)		F'd, 7; aft, 10.		
	1891.	Patent Slip (250 tons)	200		40			
	1891.	Johannsen & Co.: Devrient Patent Slip	500	250 (cradle)		F'd, 7; aft, 10.		
Swinemunde, Germany.								
Stettin, Germany.	1891.	Vulcan Co.: Floating, sectional	302		52		No tides	
		(2,500 tons)						
	1891.	Möller & Holberg: Patent Slip (1,500 tons) ...	320					
		Patent Slip (1,000 tons) ...	280					
Rostock, Germany.	1891.	Neptune Co.: Patent Slip	800 (520 out water)	200 (cradle)			No tides	
		Patent Slip (for vessels of 800 tons register).	220					
Lubeck, Germany.	1891.	Pioneer Floating (1,500 tons). (H. Koch.)	220		46	14	No tides	
	1891.	Two Patent Slips, for ves- sels of 400 tons register. (T. H. Evers.)	300		30	11½		
Kiel, Germany.	1891.	Imperial German Govt.:					No tides	
		No. 1	360		77	27½		
		No. 2	329		72	25½		
		No. 3	309		72	22½		
		No. 4	309		72	19½		
		Floating (3,000 tons)	236½					
	1891.	Swentine and Kiel Dock Co.:						
	Floating, No. 1 (1,750 tons)	200		54½	17			
	Floating, No. 2 (1,200 tons)	200 (in 2 sec- tions)	140 { 60)	45½	15			
Flensburg, Germany.	1891.	Off-shore Floating, large (Under construction; to be finished during 1892.)						
	1891.	Patent Slip						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1885.					Facilities for small repairs.
	1888.					Two mechanical establishments afford facilities for all ordinary repairs.
	1891.					Facilities for minor repairs at Königsberg. At Elbing, about 40 miles from Pillau, the works of F. Schichau afford best facilities for construction and repair of torpedo boats and machinery.
German Government Dockyard.	1888.	Hulls and machinery; large.				60-ton crane at dockyard; the floating dock at Neufahrwasser will take on ironclads of the <i>Sachsen</i> class, lightened to 8,000 tons; dock with ship, can then be towed to dockyard, which is not otherwise available for vessels of more than 15 feet draught.
Johannsen & Co	1891.	Hulls only.				
Klawitter, J. W	1891.	Hulls and machinery.				
Springer, C. G.	1891.	Machinery.				
Steinig, Carl	1891.	Machinery.				
	1889.					One foundry and machine shop; minor repairs.
Aron and Gollnow (Grabow).	1890.	Hulls and machinery.				
Möller and Holberg (Grabow).	1892.	Hulls and machinery.				20-ton crane.
Nüsseke & Co	1892.	Small.				
Vulcan Works (Bredow).	1892.	Hulls and machinery.				60-ton and 40-ton floating cranes.
Neptune Works	1891.	Hulls and machinery.				30-ton sheers.
Koch, H	1891.	Hulls only.				
Lübecker Maschinenbau Actien Gesellschaft.	1891.	Machinery; large.				Also, two other machine shops.
German Government Dockyard.	1891.	To hulls and machinery.				60-ton crane and 40-ton floating crane.
Conradi Shipyard	1889.	Hulls only.				
Germania Works	1891.	Hulls and machinery; large.				60-ton crane, with 22 feet alongside.
Howaldt Works	1891.	Hulls and machinery; large.				60-ton crane, with 16 feet alongside.
Flensburger Schiffsbau Gesellschaft.	1891.	Hulls and machinery; large.				

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Cuxhaven, Germany.	1891.	Eleven common slipways (for vessels up to 300 tons reg- ister).	100 to 250					
Hamburg, Germany.	1892.	Hamburg Amer. Packet Co.	400		50	19		6½
	1892.	B. Wencke: Dry Dock	260		50	14		
		Patent Slip (1,150 tons)	650					
	1892.	Reiherstieg Schiffswerfte & Maschinenfabrik: Off-shore Floating	330	330	65	18		
		(2 sections; 5,000 tons.)						
	1892.	Blohm & Voss: Floating, iron, No. 1	360		52	20		
		(3 sections; 4,000 tons.)						
		Floating, iron, No. 2	320		52	18		
		(3 sections; 3,000 tons.)						
	1892.	H. Brandenburg: Floating (4,000 tons)	350		64	20		
		Patent Slip (450 tons)	250					
	1892.	A. G. Stulcken: Floating, sectional	269		39	13		
	(2,000 tons)							
	Floating, sectional	210		45	14			
	(2,000 tons)							
	Patent Slip (1,050 tons)	600						
1892.	Wichhorst's Floating, Altona	138		33	11			
	(520 tons)							
1892.	Wichhorst's Patent Slips: No. 1 (600 tons)	600						
	No. 2 (400 tons)	500						
1892.	Dreyer's Slip (1,000 tons)	260		35				
Bremerhaven, and Geestemunde, Germany.	1890.	North-German Lloyd Co.: Double Dock (for two ves- sels, side by side.)	{ 450 370		58	19½		10½
	1890.	Bremer Schiffsbau Ges.: Double Dock (for two ves- sels, side by side.)	{ 360 238		47	20		
	1890.	F. W. Wencke: Double Dock (for two ves- sels, side by side.)	300		54	17		
	1890.	C. Lange: No. 1	361		60	19		
		No. 2	211		50	17		
	1890.	J. C. Tecklenborg: Double Dock (for two ves- sels, side by side.)	{ 370 230		45½	17		
1890.	Geo. Seebeck: Double Dock (for two ves- sels, side by side.)	{ 300 170		40½	16			
Nordenham, Germany.	1892.	Dry Dock, under construction (Dock and Warehouse Co.)	370		50			
Brake, Germany.	1891.	Dry Dock (G. H. Thyen)	343½		42	16		
Vege sack, Germany.								
Bremen, Germany.	1891.	Weser Actien Gesellschaft: Floating, sectional (1,200 tons)	136		46	11½		
Wilhelmshaven, Germany.	1887.	German Govt. Dockyard: Dry Dock, No. 1	493					11½
		Dry Dock, No. 2	351					
		Dry Dock, No. 3	298					
		Sea Lock (used as a dock). Two Patent Slips						
	1891.	A. Schwoon, Varelshaven (8 miles distant).	100		24½	6		

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1887.					Facilities for small repairs.
Blohm & Voss	1892.	Hulls and machinery; large.				There are other mechanical establishments, in addition to those mentioned by name; 150-ton steam crane, Asia quay.
Jürgens, C., & Co....	1892.	Hulls and machinery.				
Krause, H.	1892.	Hulls only.				
Reiherstieg Schiffswerfte & Maschinenfabrik (Harburg).	1892.	Hulls and machinery; large.				
Schiffswerfte & Maschinenfabrik Actien Gesellschaft.	1892.	Hulls and machinery.				
Bremer Schiffsbau Gesellschaft (Bremerhaven),.	1891.	Hulls and machinery.				21-ton crane; the principal establishment of this company is at Vegesack. 20-ton crane.
Lange, C. (Bremerhaven).	1891.	Hulls only.				25-ton crane.
North German Lloyd Co. (Bremerhaven).	1891.	Repairs to hulls and machinery.				30-ton crane.
Tecklenborg, J. C. (Geestemünde).	1891.	Hulls only.				
Wencke, F. W. (Bremerhaven).	1891.	Hulls only.				
	1885.					Facilities for ordinary repairs; several shops.
Heepe & Co	1891.	Hulls only.				Minor repairs to machinery can be executed at dry dock.
Bremer Schiffsbau Gesellschaft.	1891.	Hulls and machinery.				
Lange, J.	1891.	Hulls only.				
Weeser Works	1891.	Hulls and machinery; large.				35-ton cranes.
German Government Dockyard.	1887.	Large				50-ton floating sheers; 15-ton steam hammer.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Emden, Germany.	1891.	None						
Helder, and Willemsoord, Holland.	1891.	Netherlands Govt. Dockyd.: Stone, No. 1 No. 2	374½		63½	18	4½	3½
			273½		59½	16		
Amsterdam, Holland.	1891.	Koninginne Floating	401½		62½	17½		
		(4,000 tons; in 2 parts of 4 sections each.)						
	1891.	Netherlands Floating	402		56	18		
		(3,000 tons; 2 sections of 132 ft.; 2 sections of 68 ft.)						
Rotterdam, Holland.	1886.	Rotterdam Floating, iron: Section No. 1 (4,000 tons) Section No. 2 (2,000 tons)	295	295	{ 70½ 67 }	20½		
			157	157	{ 70½ 67 }	20½		
			288		52	14		
					180 (cradle)			
					200 (cradle)	38		
1886.	Katendrecht Floating, iron..	288						
1886.	Patent Slip (1,200 tons).....							
1886.	Delfshaven Patent Slip.....							
1886.	Schiedam Patent Slip.....							
		(1,100 tons)						
Dordrecht, Holland.	1889.	Patent Slip (1,100 tons).....	180		36			
Hellevoetsluis, Holland.	1886.	Netherlands Govt. Dockyd.: Brick (out of repair).....	500 (in 2 sec- tions)			17½	5½	
Flushing, Holland.	1886.	Schelde Co.: No. 1 No. 2	243½		52	13	15	11
			377		69			
Middleburg, Holland.	1891.	Prins Hendrik	480		66	15	No tides...	
Antwerp, Belgium.	1892.	City Dry Docks: No. 1 No. 2 No. 3 No. 4 No. 5 No. 6	411		81½	23	15	
			227		39½	14		
			157½		32½	9½		
			429½		49	17½		
			429½		49	17½		
			429½		49	17½		
	1892.	Société John Cockerill	400		41	17½		
	1892.	Câles et Chantiers de l'Es- caut: No. 1 No. 2	330 300		40 36	14 12		
	1885.	Floating (6,000 tons)	460		82	22		
	1892.	Gridiron (Maas Desiré)				9		
	1890.	Cruybeke Dry Dock	250		41½	13		
	1890.	Burght Dry Dock	200		38	12		
			(Not in use.)					
		(Not in use.)						
Ghent, Belgium.	1892.	Dry Docks, new: No. 1 No. 2	426½ 248½		42½ 36	17½ 14½	No tides...	
Ostend, Belgium.	1887.	Two Patent Slips (for vessels of 700 tons).						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Netherlands Govt. Dockyard (Willemsoord).	1890.	Ordinary repairs.				
Netherlands Govt. Dockyard.	1890.	Large.				80-ton floating crane; 15-ton steam hammer.
Goedkoop, D., jr.	1891.	Hulls only.				
Groen, F. F.	1891.	Hulls only.				
Huijgens & Van Gelder.	1891.	Hulls only.				
Koninklijke Fabriek voor Stoom en Andere Werktuigen.	1890.	Hulls and machinery; large.				Works not in operation, August, 1890, on account of financial difficulties.
Meursing, J. F.	1891.	Hulls only.				
Bonn & Mees.	1890.	Hulls only.				
Maatschappij de Maas (Westzeedyk).	1890.	Hulls and machinery.				
Nederlandsche Stoomboot Maatschappij (Fyenoord).	1890.	Hulls and machinery; large.				
Rijkee & Co.	1890.	Hulls only.				
Smit, J. & K. (Krimpen).	1890.	Hulls only.				
Smit, P., jr. (Slikkerveer).	1890.	Hulls and machinery.				
Netherlands Govt. Dockyard.	1890.	Small.				
Koninklijke Maatschappij de Schelde.	1891.	Hulls and machinery; large.				50-ton crane.
Den Bouwmeester (Borsius & Van der Letje).	1887.	Hulls only.				Middleburg can be reached by canal from Flushing by vessels of 24½ ft. draught.
De Decker, J. Société John Cockerrill (Hoboken).	1889. 1892.	Hulls only. Hulls and machinery; large.				120-ton crane at New Docks (Kattendyk Basin).
						Ghent can be reached by canal from Ternenssen by vessels of 18 ft. draught.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Dunkirk, France.	1892.	Dry Docks, new:					16½	13½
		No. 1 (not yet opened).	352½	324½	67½; 46	21		
		No. 2 (opened, 1891)....	352½	324½	64½; 46	26		
		No. 3 (opened, 1891)....	282½	249½	64½; 46	21		
	No. 4 (opened, 1891)....	601½	556	90½; 68½	26½			
	1891.	Patent Slip (1,000 tons).....		246½				
	1891.	Gridiron	155½					
Calais, France.	1891.	Dry Dock (East Basin).....	508½	426	68½	26½	21	17½
	1891.	Gridiron	183					
Boulogne, France.	1891.	Gridiron	246					
Dieppe, France.	1891.	Gridiron	198½					
	1891.	Dry Dock, under construc'n..	492					
Fécamp, France.	1891.	Gridiron						
Havre, France.	1891.	Bassin de l'Eure:					22	18
		No. 4	497		98½	28½		
		No. 5	535		65½	28½		
	No. 6	430		52½	25½			
	1891.	Bassin de la Citadelle:						
		No. 1	178		36	18½		
		No. 2	235		42½	20½		
	No. 3	289		52½	22			
	1891.	Floating, wood (800 tons)....	210		40	14		
	1891.	Gridiron	156		32			
1891.	Three Pontoons	59						
		(1,200 tons, total.) (each)						
Rouen, France.	1891.	Patent Slip (1,800 tons)..... (Renoux and Bonpain.)		295 (cradle)		14½	5½	
Honfleur, France.	1888.	Gridiron	197		33½			
Trouville, France.	1891.	None.....						
Caen, France.	1891.							
Cherbourg, France.	1890.	French Govt. Dockyard:					17½	13
		No. 1	355	300	59½	30		
		No. 2	390	330	59½	30		
		No. 3	390	330	50½	30		
		No. 4	355	300	59½	30		
		No. 5	495	455	89	37		
		No. 6	508½	461	59½	26½		
		No. 7	264½	237½	59½	18		
	No. 8	257½	219	59½	18			
	1890.	Commercial Dry Dock.....	259	223	46	16½		
1890.	Gridiron	164		46				

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1888.					Facilities for ordinary repairs; improved facilities to be provided in connection with dry docks, then under construction; 40-ton floating crane.
	1888.					Ample repairing facilities to be provided in connection with dry dock, then under construction.
	1887.					Facilities for ordinary repairs to machinery.
	1887.					Facilities for ordinary repairs; 30-ton crane in docks, Duqueane Basin.
	1891.					Facilities for minor repairs to hulls and machinery.
Ateliers et Chantiers de la Loire.	1890.	Machinery and small hulls.				The dry docks afford every facility for repairs; 100-ton sheers and 20-ton crane at No. 4 dry dock; 25-ton sheers at No. 2; 35-ton sheers at No. 3; 30-ton floating steam sheers in Bassin de l'Eure.
Caillard Frères	1891.	Machinery.				
Compagnie Générale Transatlantique.	1891.	Hulls and machinery; large.				
Dubus Frères & A. Dupont.	1891.	Hulls only.				
Duchesne & Cie. . . .	1891.	Machinery.				
Forges et Chantiers de la Méditerranée.	1891.	Hulls and machinery; large.	45 ft. long; turned; 10 tons wt., forged.			
Normand, A.	1891.	Hulls and machinery.				
Ateliers et Chantiers de la Loire (successors to Claparède & Cie.)	1890.	Hulls only; machinery built at St. Denis.				The patent slip lifts vessels sidewise; cradle is in two parts, 162 ft. and 133 ft. long, respectively, which can be used together or separately.
Malart Works (Ile Lacroix.)	1891.	Machinery.				
Milcent Works. (Ile Lacroix.)	1891.	Machinery.				
	1887.					Facilities for minor repairs.
	1887.					Facilities for small machinery repairs.
	1888.					Limited facilities for machinery repairs.
French Government Dockyard.	1890.	Large				
Postal, A., & Ses Fils (Commercial Dry Dock).	1890.	Hulls and machinery; all ordinary repairs.				

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
St. Peter Port, Guernsey, Channel Ids.	1891.	Two Patent Slips (650 tons) (States of Guernsey.)	196	145 (cradle)	40	F'd, 10; aft, 14½	26	18½
St. Sampson's, Guernsey, Channel Ids.	1891.	Two Patent Slips (500 tons) (States of Guernsey.)		130 (cradle)	40	F'd, 10; aft, 14½	26	18½
St. Helier, Jersey, Channel Ids.	1891.	Floating, wood	130		30	16		
Granville, France.	1890. 1890.	Granville Dry Dock Two Gridirons, each	221 101		46½	18	37	27½
St. Malo, and St. Servan, France.	1891.	Two Gridirons, each	165					
Brest, France.	1890.	French Govt. Dockyard:					19½	14½
		Double Dock { No. 1	285½		65½	20		
		{ No. 3	259½		65½	20		
		Double Dock { No. 2	250		53½	11		
		{ No. 4	271½		53½	11		
		{ No. 5	358½		65½	31		
		{ No. 6	229½		48½	10½		
		Double Dock { No. 7	398		83½	31		
		{ No. 8	347½		65½	31		
		{ No. 9	318½		66	31		
	1891.	Floating, wood	262½		32½			
	1891.	Gridiron	370					
	1891.	Gridiron	106					
L'Orient, France.	1890.	French Govt. Dockyard:					13	9½
		No. 1	360½	365	52	23½		
		No. 2	508½	488½	64	26½		
St. Nazaire, France.	1890.	Penhouet Basin:					17	13
		No. 1	459½	446½	82	27½		
		No. 2	393½ (in 2 sec- tions)	384	42½	16		
		No. 3	505½	492	59	27½		
Painbœuf, France.	1891.	Dry Dock	262½		52	14½	8	
Nantes, France.	1891.	None						
La Rochelle, France.	1892.	La Pallice Basin:					16½	11½
		Dry Docks (out in rock)						
		No. 1 Dry Dock. (2 sections.)	577½	542	66	28½		
		No. 2 Dry Dock. (2 sections.)	351	329	43	25½		
	1891.	La Rochelle Gridiron	259					
	1891.	Patent Slip (125 tons) (Lie & Son.)	133	67 (cradle)		2½; 4.		

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1890.					Wooden shipbuilding carried on; 10-ton crane.
	1890.					Wooden shipbuilding carried on; 10-ton crane.
	1883.					Facilities for small machinery repairs; wooden shipbuilding carried on.
	1891.					Repairs of all kinds can be effected.
	1887.					Facilities for minor repairs.
French Government Dockyard.	1891.	Large				In addition to the extensive works at the dockyard, Brest affords excellent facilities at private mechanical establishments for repairs of all kinds.
French Government Dockyard.	1885.	Large				In addition, there are private establishments with facilities for ordinary repairs; 120-ton hydraulic crane at dockyard.
Ateliers et Chantiers de la Loire.	1891.	Hulls and machinery; large.				
Compagnie Générale Transatlantique.	1891.	Hulls and machinery; large.				80-ton crane.
Dean & Couron	1891.	Machinery.				
French Government Works (Indret).	1890.	Machinery; large.				In addition to the establishments mentioned by name, there are several others affording facilities for all ordinary repairs to machinery; 60-ton steam crane at
Ateliers et Chantiers de la Loire.	1891.	Hulls and machinery; large.				Qual d'Aiguillon.
Brissonneau, Derouaille & Lotz.	1891.	Machinery.				
Dubigeon, A.	1891.	Hulls only.				
Faivre Frères	1891.	Machinery.				
Gilhet, L.	1891.	Machinery.				
Lotz, Fils de l'Ainé.	1891.	Machinery.				
Voruz, Ainé	1891.	Machinery.				
Decout-Lacour, Eugène.	1891.	Machinery.				In addition, there are other establishments affording facilities for ordinary repairs.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Rochefort, France.	1888.	French Government:						
		Double Dock	{ No. 1	195	51½	15	16½	13
			{ No. 2	246	47	16½		
		Large Dock	No. 3	376½	389½	68½			25½
Old Dock (Commercial)		246	246	50	15			
Bordeaux, and Lormont, France.	1891.	Bordeaux Dry Dock	498	426½	72	26½	18	11½
		(Ponts et Chaussées.)						
	1888.	Lormont Dry Dock	190	174	39	14		
	1888.	Railway des Transatlan- tiques (3,000 tons).	393	{ 209 }				
				{ 180 }				
	1888.	Lormont Floating, wood	213	195	40½	14½		
	1888.	Patent Slip (Bacalan)	426½	196½	37½			
		(cradles)						
		(cradle)						
Bayonne, France.	1888.	Dry Dock, unfinished (Temporarily fitted for use by small vessels.)	244	152	33	9	12	10½
Passages, and San Sebastian, Spain.								
Bilbao, Spain.	1892.	Bilbao Dry Docks:					13	
		Double { No. 1	328½		44	13		
		{ No. 2	308		44	14		
	1892.	Dry Dock, new (Asterillos del Nervion.)	470		74½	23½		
Santander, Spain.	1884.	None						
Gijón, Spain.	1891.	Dry Dock (Cifuentes, Stoldt & Co.)	278		46	15½	14	11
Ferrol, Spain.	1892.	Campaña Dry Dock (Government Dockyard.)	475½		82	32½	15	9½
	1892.	Old Dock	256			21½		
	1892.	Campaña Patent Slip (1,000 tons)	200		40			
Corunna, Spain.	1891.	None						
Vigo, Spain.	1891.	None						
Oporto, Portugal.	1891.	None						
Lisbon, Portugal.	1891.	Government Dockyard		278½ (floor)	56½	19	12	9
	1891.	Cacilhas Dry Docks:						
		No. 1	224	216	37	12		
		No. 2	150	145	26	10		
	1891.	Cacilhas Floating (600 tons)	150		39½	13		
Setubal, Portugal.	1891.	None						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
French Government Dockyard.	1888.					100-ton sheers.
Chantiers et Ateliers de la Gironde.	1888.	Hulls only; large.				Every facility for repairs of all kinds; 45-ton sheers at the Bordeaux Dry Dock; Railway des Transatlantiques hauls up vessels sidewise; the two cradles can be used either separately or together.
Société de Travaux Dyle & Bacalan.	1888.	Hulls and machinery.				
French Southern Railway Co.	1888.	Machinery.				
	1887.					Facilities for small repairs to hulls and machinery.
	1886.					One foundry, with facilities for machinery repairs.
Asterillos del Nervion (Martinez Rivas and Palmer Works).	1891.	Hulls and machinery; large.				100-ton sheers.
Aberly & Co	1890.	Machinery.				
Cortady, Agustin, & Co.	1890.	Machinery.				
Cortino, Viuda & Hijos de.	1890.	Machinery.				
Moffat & Co.	1890.	Machinery.				
Robertson Works.	1890.	Machinery.				
None	1884.					
Cifuentes, Stoldts & Co.	1891.	All ordinary repairs.				
Spanish Government Dockyard.	1892.	Hulls built; large.	No facilities for shafts.		Large.	100-ton sheers.
La Graña Shipyards.	1892.	Hulls built; small repairs to machinery.				
	1887.					Facilities for ordinary repairs to machinery.
	1887.					One foundry, with facilities for ordinary repairs to machinery.
Portuguese Government Dockyard.	1887.	All ordinary repairs.				40-ton steam sheers; 60-ton crane at Arsenal Quay; 18 feet alongside at L. W. In addition to the Government Dockyard, there are several large private engineering establishments.

COALING, DOCKING, AND REPAIRING

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Huelva, Spain.	1892.	None.....						
San Lucar, Spain.	1883.	None.....						
Seville, Spain.	1891.	None.....						
Cadiz, Spain.	1892.	Govt. Dockyard (Caracas):					12	9
		Dry Dock, No. 1.....	240	.....	55	24		
Dry Dock, No. 2.....		338	.....	70	24			
Dry Dock, No. 3.....		194	.....	51	18			
		Patent Slip (600 tons).	216½	130 (cradle)				
	1892.	Cia. Trasatlantica (Troca- dero):						
		Dry Dock.....	492	461	62½	24		
		Patent Slip (500 tons).	410	136 (cradle)	50	7½; 11		
Algeciras, Spain.	1883.	None.....						
Gibraltar.	1890.	None.....						
Malaga, Spain.	1891.	None.....						
Almeria, Spain.	1891.	None.....						
Cartagena, Spain.	1890.	Government Dockyard: Floating (7,500 tons). Three Patent Slips (Used as building slips.)	350			27		
Torrevecija, Spain.	1883.	None.....						
Alicante, Spain.	1891.	None.....						
Denia, Spain.	1891.	None.....						
Valencia, Spain.	1887.	None.....						
Tarragona, Spain.	1891.	None.....						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None	1892.					One foundry and machine shop, with facilities for ordinary repairs.
None	1883.					
	1883.					Extensive shops, with facilities for ordinary repairs to machinery.
Spanish Government Dockyard (Caracas).	1888.	Large.				50-ton sheers; 20-ton crane. A force of trained divers is maintained.
Compañía Trasatlántica (Trocadero).	1892.	Hulls and machinery.				60-ton sheers with 17½ to 22 feet alongside at L. W.
Haynes, Thos., Sons of.	1892.	Hulls and machinery.				
Portilla, White & Co.	1892.	Machinery.				
Vea Murgia Co.	1892.	Hulls; large				Contractors for a battleship of 9,000 tons for Spanish Government.
None	1883.					
H. B. M. Dockyard (New Mole).	1890.	Large, to machinery.		Any size.	2 tons.	A dry dock 520 feet long, by 100 feet wide, by 32 feet deep, to be constructed at New Mole.
Haynes, Thos., Sons of.	1890.	All ordinary machinery repairs.				
Ferreria Heredia.	1891.	Large, to machinery.				In addition, there are several smaller establishments.
Gimenez, Francisco.	1890.	Ordinary repairs.				
Spanish Government Dockyard.	1890.	Hulls built; machinery repaired.				100-ton sheers at the dockyard; 30-ton floating crane in harbor.
None	1883.					
None	1883.					
	1887.					There are several machine shops in Grao de Valencia, with facilities for all ordinary repairs to engines and boilers.
None	1883.					

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordinary springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Barcelona, Spain.	1892.	Patent Slip (1,000 tons).....	644	265 (cradle)	.....	F'd, 7; aft, 19.	.....	.....
Palma, Majorca, Balearic Ids.	1891.	None						
Port Mahon, Minorca, Balearic Ids.	1887.	Patent Slip (800 tons)						
Port Vendres, France.								
Cette, France.	1884.	None						
Marseilles, France.	1891.	Cie. des Docks et Entrepôts: No. 1	593½	557½	73½	25½	No tides...	
		No. 2	360½	344½	62	19½		
		No. 3	295	279	54½	19½		
		No. 4	295	279	54½	19½		
		No. 5	426½	410	54½	21½		
		No. 6	426½	410	54½	21½		
		Floating, wood	210	197	59	15		
La Ciotat, France.	1892.	Cie. des Messageries Mari- times.	510		70½	21½	No tides...	
Toulon, and La Seyne, France.	1890.	Government Docks, stone: Vauban, No. 1	246		53	19		
		Vauban, No. 2	246		54½	20½		
		Vauban, No. 3	283		53½	24½		
		Castignean, No. 1	326½		62½	29		
		Castignean, No. 2	385½		62	30		
		Castignean, No. 3	531½		62	30		
		(2 sections) Missiessy, No. 1	426½		88	32½		
		Missiessy, No. 2	426½		88	32½		
	1890.	Forges et Chantiers de la Méditerranée (La Seyne): Two Hydraulic Slips (2,000 tons each.)						
Nice, France.	1889.	None						
Villefranche, France.	1889.	None						
Ajaccio, Corsica.	1891.	None						
Bastia, Corsica.	1891.	None						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Alexander Brothers (Barceloneta).	1887.	Machinery; all ordinary repairs.	18 ft. long, turned; no heavy forging.	About 12 ins.	7 tons....	One 25-ton floating crane in port.
Maquinista (La) Terrestre y Marítima (Barceloneta).	1889.	Machinery; facilities for large repairs.				
Vulcano, El Nuevo (Barceloneta).	1887.	All ordinary repairs.				60-ton sheers.
Wohlguemuth, Alejandro (Arsenal Civil, 2 miles distant).	1889.	Hulls and machinery.				Works being extended; Clark & Standfield floating dock, and 60-ton floating crane to be built.
None.....	1883.					
	1887.					Minor repairs can be effected at the patent slip; there is a Spanish arsenal for torpedo work.
	1884.					Several small machine shops afford facilities for minor repairs.
Forges et Chantiers de la Méditerranée.	1887.	Hulls and machinery; large.				Repairs of all kinds can be effected at the dry docks; in the repairing basin are 120-ton, 40-ton, and 25-ton sheers, and two of 30 tons.
Fraissinet & Cie	1891.	Machinery.				
Cie. des Messageries Maritimes.	1891.	Hulls and machinery; large.				
French Government Dockyard (Toulon).	1890.	Large.....				The sections of the double dock, No. 3, Arsenal de Castigneau, are respectively 295 and 236 ft. long.
Forges et Chantiers de la Méditerranée (La Seyne).	1890.	Hulls and machinery; large.				This company has ten masonry building slips at La Seyne, two of which are fitted for use as marine railways for the repair of vessels.
Dumontant & Cie ...	1889.	Machinery; small.				
Giordan & Fils	1886.	Machinery; small.				
None.....	1889.					

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basic: dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Savona, Italy.	1888.	Patent Slip (Vallega & Anzo.)	164		49			
Genoa, Italy.	1892.	Municipal Dock, masonry ...	294		70	21½	No tides...	
	1892.	Floating (3,000 tons).....	321½		65	17		
	1892.	Patent Slip (1,200 tons).....	610 (246 out water)		60	23		
	1892.	New Docks, stone: No. 1 (to be finished, 1892). No. 2 (opened June 4, 1892).	588½		81½	31		
			721½ (in 2 sec- tions)		59	28		
Spezia, Italy.	1891.	Govt. Dockyard, stone:					No tides...	
		No. 1	357½		71	30½		
		No. 2	429½		77½	30½		
		No. 3	429½		77½	30		
		No. 4	357½		71	30		
		No. 5	705½ (in 2 sec- tions)		{ 106½ 81½	33		
Leghorn Italy.	1890.	Orlando Bros.:					1½	1½
		Dry Dock, stone..... (Leased from Govt.)	442½		65	23½		
		Patent Slip (1,500 tons). Patent Slip (1,500 tons).	295 278½		56½ 56½			
Civita Vecchia, Italy.	1891.	None.....						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Stabilimento Cal-cagno.	1890.	To hulls.				
Stabilimento Mig-liardi.	1890.	All ordinary repairs.				
Stabilimento Ser-vettaz.	1890.	Machinery repairs.				
Tardy & Benecke (Iron and Steel Works).	1890.	Forgings, etc.		No facilities.		Bankrupt, 1891.
Italian Government Arsenal.	1890.	Small; torpedo-boat and torpedo work.				In addition to the establishments noted, there are iron and steel works at Sestri Ponente, Voltri, and Prà.
Ansaldo Works (Bombrini Bros., Sestri Ponente, and Sampierdarena).	1890.	Hulls and machinery; large.	Largest sizes forged and turned.	Any size....	40 tons...	100-ton floating crane; 40-ton steam hammer; shipyard is at Sestri Ponente, engine and boiler shop at Sampierdarena.
Cravero, E., & Co., (Foce).	1890.	Hulls and machinery; large.	No facilities for heavy forging.			75-ton slicers.
Molinari, Tommaso (Foce).	1890.	Machinery; small.				
Odero, N., & Ferro (Sestri Ponente).	1890.	Hulls and machinery; large.	No facilities for heavy forging.			
Podestà, Carlo..... (Sestri Ponente).	1890.	Hulls only; small.				
Roncallo Bros..... (Sampierdarena).	1890.	Hulls and machinery.				
Società Cooperativa di Produzione.	1890.	Machinery.				
Società di Navigazione Generale Italiana (Florio-Rubattino).	1890.	Ordinary repairs to hulls and machinery.				
Wilson & MacLaren..	1890.	Machinery; large.				
Italian Government Dockyard.	1891.	Facilities for large work, of all kinds; building and repairing.				160-ton, 100-ton, and 60-ton cranes. No. 5 Dry Dock will take, at the same time, a vessel of 386 feet length in the inner section, and one of 285 feet in the outer.
Baffico & Co.....	1889.	Ordinary repairs.				Marine work discontinued by this establishment, 1891.
Continental Lead and Iron Co. (Pertusola).	1890.	Hulls and machinery; large.				
Larini, Nathan, & Co.	1891.	Ordinary repairs.				
Orlando Bros.....	1889.	Hulls and machinery; large.	14 ins. diam. forged; any size, turned.	20 ins.....	40 tons...	70-ton crane.
Fiorentini & Cappi..	1889.	Machinery; ordinary repairs.				
Gambaro Bros.....	1889.	Castings and minor repairs to machinery.				
None.....	1887.					

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Maddalena, Sardinia.	1886.	Slipway (2,000 tons) (Id. of Caprera.)	264					
Cagliari, Sardinia.	1891.	None.....						
Naples, Italy.	1891.	Government Dockyard.....	246½		62½	19½ (blocks)		
Castellamare, Italy.	1889.	None.....						
Salerno, Italy.	1889.	None.....						
Messina, Sicily.	1890.	Government stone..... (Leased to Dry Dock Co.)	351	351	{ 71½ } 57½ }	26½		
	1886.	Slipway (2,000 tons).....	262½					
Milazzo, Sicily.								
Palermo, Sicily.	1892.	Patent Slip (1,200 tons)..... (Nav. Gen. Italiana.)	232½	195 (cradle)	39½	F'd, 13; aft, 21	No tides...	
Marsala, Sicily.	1891.	None.....						
Girgenti, Sicily.	1891.	None.....						
Licata, Sicily.	1890.	Two Slipways, small.....						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
	1889.					One shop with facilities for minor repairs.
Fonderia Stefano Daglio (Enrico Peltz).	1889.	Machinery; small.	6 ins. diam., 10 ft. long.	No facilities.	2 tons.	
Italian Government Dockyard.	1891.	Large, to machinery (hulls at Castellamare).				Plans approved for two docks, 490 and 410 feet long, respectively.
Armstrong (Sir W. G.), Mitchell & Co. (Pozzuoli).	1889.	Hulls.				Devoted principally to gun construction; 187-ton crane on wharf, 32½ feet of water alongside.
Pattison, C. & T. T.	1890.	Large, to machinery; small hulls built.	10 ins. diam., forged and turned.	Any size.	8 tons.	
Società Industriale Napoletana (Guppy & Co.)	1890.	Large, to hulls and machinery.	4 ins. diam., forged; large sizes turned.	Any size.	10 tons.	
Italian Government Dockyard.	1889.	Hulls only; large.				
Società Anonima Impresa Industriale Italiana.	1889.					
Fonderia Fratze.	1889.	Machinery; large.				
Marchesano, Gaetano	1889.	Machinery; small.				
Stabilimento Meccanico (adjoining dry dock).	1890.	Large, of all kinds.				36-ton steam-hammer.
Fonderia Archimede (F. Manganaro).	1890.	Machinery; large.				
Corsi, Pietro	1889.	Machinery; ordinary repairs.				40-ton crane on N. mole; a dry dock is projected, to be 563½ ft. long and 56½ ft. wide at entrance, with a depth of water on sill of 23½ feet.
Fonderia Oreste (Navigazione Generale Italiana.)	1890.	Large, to hulls and machinery.				
Panzera, Francesco.	1889.	Machinery; ordinary repairs.				
None	1883.					
None	1886.					
None	1883.					

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W. ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Valetta, Malta.	1891.	H. B. M. Dockyard:					No tides...	
		Double } Outer, No. 1.....	256	} 535 {	} 81½ {	} 25 {		
		Inner, No. 2.....	300½				73	25
		Somerset Dock, No. 3.....	468	427½	79½	33½		
	Hamilton Dock, No. 4.....	526½	520	94	35½			
		(With caisson at inner stop.)			76			
1891.	Pontoon Dock & Eng. Wks.:							
	Hydraulic Lift.....	346		62½				
	(Inside Creek.)							
	Pontoon No. 1 (2,500 tons)	344		59½	18½			
	Pontoon No. 2 (1,200 tons)	210		56	18½			
1889.	Patent Slip (Freuch Creek)							
1889.	Patent Slip (The Mursa)							
Syracuse, Sicily.								
Catania, Sicily.	1891.	None						
Taranto, Italy.	1890.	Government Dockyard:					No tides...	
		Principe di Napoli, stone. (2 sections)	688½	650½	{ 105 } { 81 }	32½		
	1889.	Queirolo's Patent Slip.....	196½		41			
Gallipoli, Italy.	1891.	None						
Brindisi, Italy.	1890.	Three Patent Slips..... (Out of repair.)	One of 164; two of 125.					
Bari, Italy.	1891.	None						
Barletta, Italy.	1891.	None						
Rodi, Italy.	1883.	None						
Ancona, Italy.	1891.	None						
Ravenna, Italy.	1889.	Government Slipway, stone.	295		98 (slip)	9½		
Venice, Italy.	1890.	Government Dockyard:						
		No. 1, stone.....	525			28		
		No. 2, stone.....	295		59	19½		
		Patent Slip (200 tons).						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
H. B. M. Dockyard ..	1891.	Large, of all kinds.	Largest sizes in H. B. M. Navy.	Any size....	4 tons....	160-ton crane, 60-ton crane, and 30-ton shears at dockyard.
Pontoon Dock and Eng'g Works.	1891.	All ordinary repairs.				Hamilton Dry Dock (No. 4) was opened Feb. 12, 1892; depth of approach, 28 ft.; to be blasted out to depth of dock sill; with caisson at outer stop, length of dock is increased by 38 ft.
	1885.					One machine shop, with good facilities for minor repairs.
Italian Government Dockyard.	1890.	Installation unfinished; extensive workshops under construction.				With caisson at outer stop, length of dock is increased by 19½ ft.; a second dock projected; 160-ton hydraulic crane.
Queirolo, Cav. Giuseppe.	1889.	All ordinary repairs.				
	1889.					Two machine shops, with facilities for minor repairs.
Lindemann, Guglielmo.	1891.	Machinery.				Extensive establishment.
De Blasio, Francesco.	1889.	Machinery.				
De Giorgio, Giuseppe.	1889.	Machinery.				
None	1883.					
Cattro & Co.....	1891.	Large, to machinery.	23 ft. long, turned.	Any size....	25 tons....	Small hulls built; 20-ton crane.
Passabacqua, Antonio.	1891.	Machinery.				
Government Dockyard and Arsenal.	1889.	Large hulls built; all ordinary repairs to machinery.		Any size....	Small....	160-ton crane; 30-ton shears.
De Marco, Vianello-Moro & Co.	1891.	Machinery; all ordinary repairs.				
Layet & Co.....	1891.	Machinery, castings, etc.				
Neville & Co.....	1891.	Machinery; large.	14 ins. diam., forged; 24 ins. diam., 30 ft. long, turned.	Any size....	12 tons....	40-ton crane.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Trieste, Austria.	1860.	Austro-Hungarian Lloyds: Arsenal Dock, stone....	332	.....	73	20	2	.....
		Patent Slip (1,000 tons).	596	200 (cradle)	60 (slip)			
	1890.	Stabilimento Tecnico: San Rocco, stone.....	375	.....	66	26		
Pola, Austria.	1891.	Government Dockyard:					3½	.....
		Stone, No. 1.	467½	.....	83	27½		
		Stone, No. 2.	408	.....	91½	32		
		Floating....	300	.....	84	18		
Fiume, Austria.	1883.	None.....						
Spalato, Austria.		.....					
Cattaro, Austria.	1883.	None.....						
Corfu, Id. of Corfu, Greece.	1891.	None.....						
Argostoli, Id. of Cephalonia, Greece.	1891.	None.....						
Patras, Greece.	1891.	None.....						
Zante, Id. of Zante, Greece.	1891.	None.....						
Navarino, Greece.		.....					
Kalamata, Greece.	1891.	None.....						
Piræus, Greece.	1890.	Govt. Floating (3,500 tons)... (Salamis Bay.)	308½	.....	61	21		
	1886.	Patent Slip (small vessels). (Govt. Dockyard.)						
Ergasteria, Greece.	1886.	None.....						
Syra, Id. of Syra, Greece.	1888.	Hellenic Steam Navn. Co.: Patent Slip, hydraulic. (1,600 tons) Patent Slip, small.....						
Volo, Greece.	1891.	None.....						
Salonica, Turkey.	1891.	None.....						
Dardanelles, Turkey.	1884.	None.....						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts; diameter and length of largest that can be made.	Pipes; diameter of largest that can be brazed.	Castings; weight of largest that can be made.	Remarks.
Austro-Hungarian Lloyds.	1891.	Hulls and machinery; large.	.....	.....	.....
Brunner, August ...	1891.	Engine repairs.	.....	.....	.....
Greenham, W. B.	1891.	Machinery.	.....	.....	.....
Holt, Thomas	1891.	Machinery.	.....	.....	.....
Metlicovitz, A	1891.	Machinery.	.....	.....	.....
Stabilimento Tecnico.	1891.	Hulls and machinery; large.	.....	.....	15 tons.	
Imperial Austrian Naval Dockyard.	1890.	Large.....	.....	.....	20 tons.	20-ton steam-hammer.
Whitehead & Co	1891.	Torpedo work only.	.....	.....	.....
	1889.		.....	.....	.....	Facilities for minor repairs.
None	1883.		.....	.....	.....
	1889.		.....	.....	.....	Facilities for minor repairs.
None	1887.		.....	.....	.....
Greek Government Dockyard (Salamis Island).	1888.	Ordinary repairs.	.....	.....	.....	Plant unfinished in 1888; 60-ton sheers (to be erected).
Basilades, G., & Sons.	1890.	Machinery; all ordinary repairs.	4 ins. diam., 30 ft. long, forged and turned.	Any size.....	10 tons...	
Vulcan Engine Works (McDowell & Barbour).	1890.	Large, to machinery.	8 ins. diam., forged; large sizes turned.	Any size.....	10 tons...	30-ton sheers.
None	1886.		.....	.....	.....
Hellenic Steam Navigation Co.	1889.	All ordinary repairs; large boiler work.	.....	.....	Large.....	30-ton sheers; patent slip has taken a vessel 259 ft. long.
	1889.		.....	.....	.....	Some facilities for very slight repairs.
None	1883.		.....	.....	.....
	1883.		.....	.....	.....	One machine shop, with facilities for minor repairs.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill. H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps.
Constantinople, Turkey.	1890.	Government Dockyard:					No tides...	
		No. 1	390		90	30		
		No. 2	260		80	26		
		Double { No. 3	250		60	28		
		{ No. 4	250		60	28		
	Slipway (500 tons)	120		25				
1889.	Floating Dock (1,500 tons)	245		48½				
1892.	Slipway (670 tons)		176		7			
	(Chirket-Hairie Co.)		(cradle)					
1892.	Slipway (450 tons)		154		11			
	(Y. Olivea, Bujukdere.)		(cradle)					
Varna, Bulgaria.	1889.	None						
Sulina, Roumania.	1891.	None						
Galatz, Roumania.	1891.	None						
Ibrail, Roumania.	1891.	None						
Rustchuk, Bulgaria.	1891.	None						
Turnu Severin, Roumania.	1883.	Dry Dock, shallow	300				No tides...	
		(For river steamers.)						
Odessa, Russia.	1889.	Bellina-Fendrick Co.: Broadside Patent Slip	240			9	No tides...	
		(1,200 tons)						
	1889.	Russian Steam Navn. Co.: Broadside Patent Slip	220			8	No tides...	
		(1,000 tons)						
Nicolaieff, Russia.	1890.	Government Dockyard: Slip Dock (1,500 tons)	250			19	No tides...	
		(Morton's patent.)						
Sebastopol, Russia.	1890.	Russian Government: No. 1 stone at dockyard	580	500	82	27	No tides...	
		No. 2 under construction (to be larger than No. 1)						
		Sectional, depositing	280			21		
		1890.	Russian Steam Navn. Co.: Patent Slip (2,000 tons)	450		50		
		Patent Slip (1,400 tons)						
Kertch, Russia.	1889.	None						
Mariopol, Russia.	1889.	None						
Taganrog, Russia.	1891.	None						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs: large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Turkish Government Dockyard (Golden Horn).	1891.	Hulls and machinery: large.			6 tons.	50-ton sheers; 80-ton floating derrick.
Britannia Iron Works (J. Jones & Co.)	1891.	Large, to machinery.	24 ins. diam., 20 ft. long, turned.	12 ins.	4 tons.	20-ton sheers.
Cavafian & Bonmonti.	1891.	General repairs.				
Clyde Engine Works.	1891.	Large, to machinery.				
Cornubia Steam Works (Bond & Co.)	1801.	Large, to machinery.	16 ins. diam., 25 ft. long, turned.	Any size.	5 tons.	
	1883.					Railway workshops afford facilities for minor repairs to machinery.
Bellina-Fendrick Co.	1889.	Hulls and machinery.				40-ton floating crane.
Russian Steam Navigation and Trading Co.	1889.	Hulls and machinery.				
Russian Government Dockyard.	1889.	Large.				The Clark & Standfield sectional dock formerly located here has been removed to Sebastopol.
Russian Government Dockyard.	1889.					The sectional dock (formerly located at Nicolaieff) has taken a vessel 390 ft. long; by special arrangement of the pontoons, this dock takes the circular monitors and the <i>Opit</i> (formerly <i>Livadia</i>), the latter of 153 ft. beam.
Russian Steam Navigation and Trading Co.	1889.	Hulls and machinery; large.	24 tons wt., forged.		45 tons.	80-ton sheers; 60-ton and 30-ton floating cranes; yard to pass into possession of Govt. in 1894.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Rostoff-on-Don, Russia.	1891.	Scaramanga & Co.: Patent Slip (700 tons)	317	200 (cradle)	40	F'd, 1½; aft, 7.	No tides ..	
	1891.	Alexander Storoshenko: Broadside Patent Slip..... (Capable of taking on 4 steamers of 500 tons.)		150 by 180				
	1891.	Volga-Don Steam Nav. Co.: Broadside Patent Slip..... (Capable of taking on 2 steamers of 500 tons.)		150 by 100				
Novorossisk, Russia.	1889.	None						
Poti, Russia.	1891.	None						
Batoum, Russia.	1891.	None						
Trebizond, Asiatic Turkey.	1891.	None						
Samsoun, Asiatic Turkey.	1891.	None						
Heraclea, Asiatic Turkey.	1889.	None						
Mitylene, Id. of Mitylene, Asia Minor.	1883.	None						
Smyrna, Asia Minor.	1887.	Patent Slip (150 tons)						
		(Hamiedie Co.)						
Castro, Id. of Chios, Asia Minor.	1885.	None						
Vathi, Id. of Samos, Asia Minor.	1885.	None						
Suda Bay, Crete.	1891.	None						
Rhodes, Id. of Rhodes, Asia Minor.	1891.	None						
Limasol, Cyprus.	1891.	None						
Larnaca, Cyprus.	1891.	None						
Mersina, Asia Minor.	1891.	None						
Alexandretta, Asia Minor.	1891.	None						
Latakia, Syria.	1883.	None						
Tripoli, Syria.	1883.	None						

The following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs, large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Graham & Co.....	1891.	Ordinary repairs to machinery.				40-ton and 30-ton cranes at the repairing slips.
Lemaroff & Co.....	1891.	Ordinary repairs to machinery.				
Postoukoff & Co....	1891.	All ordinary repairs.				Iron river steamers built.
Standard Petroleum Co.	1890.	All ordinary repairs.				
Batoum Naphtha and Trading Co.	1886.	Minor repairs.				
Russian Steam Navigation and Trading Co.	1889.	Minor repairs.				40-ton floating crane.
	1885.					Wooden shipbuilding carried on.
None.....	1883.					
Papps & Co.....	1887.	Large, to machinery.			1½ tons...	10-ton steam hammer; in addition to this establishment, two others afford facilities for all ordinary repairs to machinery.
	1885.					One small machine shop.
None.....	1885.					
Turkish Government Dockyard.	1886.	Ordinary repairs to machinery.				
None.....	1889.					Wooden shipbuilding carried on.
None.....	1885.					
None.....	1883.					
None.....	1883.					
None.....	1883.					

Particulars of docking and repairing facilities of

Name of port.	Date	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin'y springs.	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Beirut, Syria.	1891.	None						
Sidon, Syria.	1883.	None						
Haifa, Syria.	1883.	None						
Jaffa, Syria.	1883.	None						
Port Said, Egypt.	1891.	Two Patent Slips..... (300 tons each.)	147½			9½		
Alexandria, Egypt.	1891.	Govt. Floating (5,000 tons)...	463		79	20		
Tripoli, Tripoli.	1891.	None						
Tunis, Tunis.	1891.	None						
Bona, Algeria.	1887.	None						
Philippeville, Algeria.	1891.	None						
Algiers, Algeria.	1890.	Government Docks, stone: No. 1 No. 2	455½ 268½	376½ 201½	86½ 72	27½ 18½		
Oran, Algeria.	1887.	Slipway, small (for vessels of 200 tons).						
Beni Saf, Algeria.	1891.	None.....						
Tangier, Morocco.	1888.	None.....						
Rabat, Morocco.	1891.	None.....						
Mogador, Morocco.	1891.	None.....						
Graciosa Id., Azores.	1885.	None.....						
Santa Cruz, Flores Id., Azores.	1891.	None.....						

the following European Station ports.—Continued.

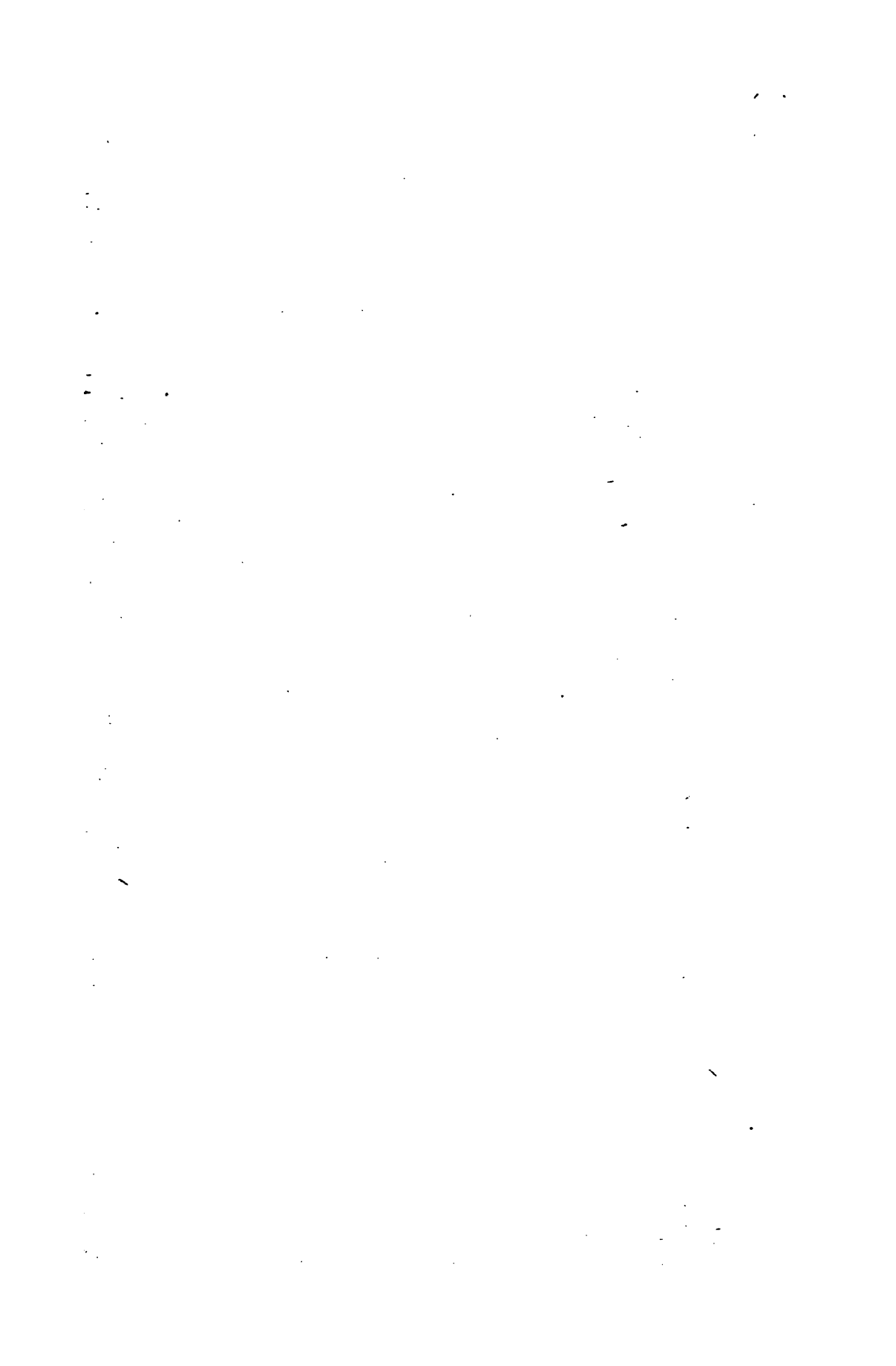
Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
None.....	1887.					No facilities for repairs beyond black-smithing and light repairs to boilers.
None.....	1889.					
None.....	1883.					
None.....	1883.					
Port Said Engine Works.	1886.	All ordinary repairs to machinery.	6 ins. diam., 20 ft. long, forged and turned.	18 ins.	2 tons	
Suez Canal Co.....	1887.	All ordinary repairs to machinery.	10 ins. diam., 15½ ft. long, forged and turned.	7½ ins.	3 tons	30-ton floating crane.
Egyptian Govt. Arsenal.	1886.	Large, to machinery.	9 ins. diam., 40 ft. long, forged and turned.	Any size	19 tons	20-ton floating steam sheers (not in use, 1890).
Autrefage, M., & Co.	1886.	Machinery: ordinary repairs.	5 ins. diam., 24 ft. long, forged and turned.	14 ins.	6 tons	
Watson Bros.....	1886.	Machinery: ordinary repairs.	8 ins. diam., 25 ft. long, forged; 34 ft. long, turned.	No facilities.	2 tons	
Government Arsenal (Goletta).	1886.	Small, to machinery.				
						40-ton floating derrick.
Dry Docks Repair Shops (French Government).	1886.	Large, of all kinds.				Three 20-ton sheers.
	1887.					Facilities for ordinary repairs to machinery.
	1891.					Good facilities for all ordinary repairs to machinery.
None.....	1884.					
None.....	1885.					
	1887.					Some facilities for minor repairs to machinery.

Particulars of docking and repairing facilities of

Name of port.	Date.	Docks, etc. (Basin dry docks, unless otherwise stated.)	Length.		Width at en- trance.	Depth on sill, H. W., ordin' y springs	Rise of tide.	
			Over all.	Over blocks.			Sp'gs.	Neaps
Horta, Fayal, Azores.	1890.	Patent Slip (unfinished).....						
Angra, Terceira, Azores.								
Ponta Delgada, St. Michael's, Azores.	1890.	Floating (1,500 tons)	184½		44½	14		
Funchal, Madeira.	1891.	None						
Santa Cruz, Teneriffe, Canary Ids.	1890.	Two Slipways, small						
Las Palmas, Grand Canary, Canary Ids.	1891.	None						
Porto Grande, St. Vincent, Cape Verde Ids.	1891.	None						
Porto Praya, Santiago, Cape Verde Ids.	1891.	None						
Dakar, Senegal.	1885.	None						
Bathurst, Gambia.	1891.	None						
Freetown, Sierra Leone.	1890.	None						
Monrovia, Liberia.	1886.	None						
Grand Bassam, (Ivory Coast), Guinea.	1891.	None						
Elmina, Cape Coast Castle, Acera, and Quitta, (Gold Coast), Guinea.	1891.	None						
Whydah, Dahomey.	1888.	None						
Lagos, (Slave Coast), Guinea.	1888.	None						
Isabel, Fernando Po, Gulf of Guinea.	1888.	None						
Libreville, Gaboon River, West Africa.	1887.	None						
Banana, Congo River, West Africa.	1887.	None						

the following European Station ports.—Continued.

Shipyards, machine shops, etc., having facilities for repairs to steamers.	Date.	Character of repairs; large or small.	Shafts: diameter and length of largest that can be made.	Pipes: diameter of largest that can be brazed.	Castings: weight of largest that can be made.	Remarks.
Breakwater Co.....	1890.	Ordinary repairs to machinery.	No facilities for heavy forgings.			
Bensaude & Co.....	1887.	Ordinary repairs.				
Breakwater Works	1887.	Ordinary repairs.			1½ tons...	
	1887.					Facilities for small repairs.
	1887.					Facilities for ordinary repairs.
	1891.					Facilities for ordinary repairs.
	1888.					Two shops with facilities for slight repairs.
None	1884.					
None	1880.					
None	1887.					
None	1887.					
	1886.					There are two yards with facilities for building schooners, lighters, and boats.
	1887.					Machine shop under construction; will afford facilities for minor repairs.
	1888.					Workshops for the repair of steam-launches, lighters, etc.
None	1887.					



III.

APPENDIX.

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TABLE SHOWING THE EVAPORATIVE POWER OF VARIOUS AMERICAN AND FOREIGN COALS.

Prepared by Chief Engineers C. H. Baker and F. G. McKean, U. S. Navy.

(From Report to Navy Department, July, 1884, upon the comparative merits of anthracite and bituminous coal.)

Market designation of coal.	State.	County or locality.	Description of coal.	Sources of information.	Percentage of combustible.	Pounds of water evaporated per pound of coal.
1 Beaver Meadow, Slope No. 3.....	Pennsylvania.	Carbon.....	Anthracite.....	Report to Navy Dept., W. R. Johnson, 1814.	84.0420	9.2073
2 Beaver Meadow, Slope No. 5.....	do	do	do	do	83.2550	9.4768
3 Beaver Meadow.....	do	do	do	do	91.8463	9.0791
4 Forest Improvement.....	do	Schuylkill	do	do	83.0298	10.0378
5 Peach Mountain.....	do	do	do	do	83.1450	10.1118
6 Lehigh.....	do	do	do	do	82.7765	8.8320
7 Lackawanna.....	do	Lehigh	do	do	91.0723	9.7828
8 Lykens Valley.....	do	Dauphin	do	do	87.7580	9.4928
9 Lehigh.....	do	Lehigh	do	do	81.4700	8.2500
10 Blackheath.....	do	Schuylkill	do	Exp'l Researches, Isherwood, Vol. I., 1863.	87.7400	11.4877
11 Harvey's Mine.....	do	do	do	do	88.6300	9.4770
12 Lackawanna.....	do	Luzerne	do	do	83.7100	9.1305
13 Scranton.....	do	do	do	do	82.7500	8.3780
14 Boston.....	do	do	do	do	76.6500	8.2420
15 Hazleton.....	do	do	do	do	84.0700	8.8530
16 Pittston.....	do	do	do	do	80.3000	8.9280
17 Council Ridge.....	do	do	do	do	86.3000	9.0520
18 Spring Mountain.....	do	do	do	do	80.3000	8.6750
19 Locust Mountain.....	do	Schuylkill	do	do	80.3000	8.7890
20 Unknown.....	do	do	do	do	83.8400	8.6750
21 Broad Mountain.....	do	do	do	do	80.0400	8.2260
22 Blackheath.....	do	do	do	do	82.7100	9.3320
23 Unknown.....	do	do	do	do	83.0000	9.3630
24 Unknown.....	do	Susquehanna Valley	do	Exp'l Researches, Isherwood, Vol. II., 1865.	88.9000	7.6500
25 Unknown.....	do	do	do	do	89.3100	10.2700
26 Unknown.....	do	North East Portion	do	Board of Naval Eng., March and April, 1873.	84.8000	9.9923
27 Wilkesbarre, Black Diamond	do	Northumberland	do	Report of Naval Eng., Report, Oct. 24, 1878.	80.7700	9.3700
28 Scranton (Del. & Hudson Canal Co.)	do	Luzerne	do	Report Q. M. G., U. S. Army, Jan. 31, 1882.	77.3000	9.2900
29 Lykens Valley.....	do	Dauphin	do	do	83.9700	7.9400
30 Forest Improvement.....	do	Schuylkill	do	do	79.4300	8.2400
31 Pittston (Penn. Coal Co.).....	do	Luzerne	do	do	83.2500	9.6200
32 Blackheath.....	do	Schuylkill	do	do	80.2000	9.8400
33 Wilkesbarre, Prospect Mine	do	do	do	do	85.0000	9.7700
34 Lackawanna, White Ash.....	do	Dauphin	do	do	83.3400	9.7500
35 Lykens Valley, Red Ash.....	do	do	do	do	85.7500	9.7300
36 White Ash, Lee.....	do	Wyoming	do	do	90.7200	9.6300
37 White Ash, Shenandoah, Middle	do	Schuylkill	do	do	84.5000	9.5500

38	Pittston, Butler Colliery.....	do	do	do	do	81.0000	9.5100
39	Hard White Ash, Lee, Bato, Vein.....	do	Northumberland	do	do	81.8300	9.4100
40	Red Ash, Lorberry.....	do	Schenykill	do	do	84.8000	9.3400
41	Leligh Valley, Old Lee Mine.....	do	do	do	do	83.0300	9.0400
42	Raven Run Mine.....	do	do	do	do	84.7400	9.0400
43	Lykens Valley, Red Ash.....	do	Dauphin	do	do	82.1100	9.2000
44	Glen Carbon.....	do	Western Middle Field	Semi-anthracite	Exptl Researches, Isherwood, Vol. I., 1863	82.3400	9.2000
45	Ormsby.....	do	Mercer	do	do	94.3100	9.6952
46	Brookfield.....	do	do	do	do	83.1700	8.2970
47	N. Y. & Md. Mining Co.....	Maryland	do	Semi-bituminous	Report to Navy Dept., W. R. Johnson, 1844	87.2915	9.7774
48	Frostburg, Nef's Mine.....	do	do	do	do	89.0440	9.4419
49	Easby's "Coal-in-store".....	do	do	do	do	91.6154	10.1883
50	Atkinson & Templeman's.....	do	do	do	do	92.1685	10.6991
51	Easby & Smith's.....	do	do	do	do	90.3138	9.9654
52	Broadtop.....	Pennsylvania	Huntington	do	Exptl Researches, Isherwood, Vol. I., 1863	89.9100	10.4025
53	Cumberland, George's Creek.....	Maryland	do	do	do	86.8100	10.7980
54	Cumberland.....	do	do	do	do	91.6100	10.2850
55	Cumberland.....	do	do	do	do	87.5200	10.0430
56	Broadtop.....	Pennsylvania	Huntington	do	do	86.1200	9.9940
57	Cumberland.....	Maryland	do	do	do	90.4500	8.7260
58	Frostburg.....	do	do	do	Board of Naval Eng. Report, Oct. 24, 1878	87.7000	9.8957
59	Brother's Valley, Standard Coal Co.....	Pennsylvania	Somerset	do	Report Q. M. G., U. S. Army, Jan. 31, 1882	88.9900	9.8500
60	Philson Iron & Coal Co., Berlin.....	do	do	do	do	90.9200	9.7500
61	Cumberland.....	Maryland	do	do	do	86.6700	10.0200
62	Dauphin & Susquehanna Co.....	Pennsylvania	do	do	Board of Naval Eng., March and April, 1873	83.6370	9.3428
63	Blossburg Creek.....	do	do	do	do	86.7961	8.6401
64	Lycoming Creek.....	do	Lycoming	do	do	83.9600	8.9107
65	Quin's Run.....	do	Clinton	do	do	91.1145	10.2720
66	Karthaus.....	do	Clearfield	do	do	92.1061	9.0912
67	Cambria Co.....	do	Cambria	do	do	90.2475	9.2404
68	Pittsburgh.....	do	do	do	do	91.7470	8.2044
69	Newcastle.....	England	Northumberland	do	do	94.3205	8.6558
70	Englton.....	Pennsylvania	Clinton	do	Exptl Researches, Isherwood, Vol. I., 1863	86.9700	9.3070
71	New River.....	West Virginia	Fayette	do	Board of Naval Eng. Report, Oct. 24, 1878	93.6000	10.2023
72	Barr's Deep Run.....	Virginia	Henrico	do	Report to Navy Dept., W. R. Johnson, 1844	88.9264	9.0182
73	Crouch & Sneed.....	do	do	do	do	85.6595	8.3448
74	Midlothian 900-foot shaft.....	do	Powhatan	do	do	89.2980	8.5842
75	Midlothian Coal Co. (average).....	do	do	do	do	85.1730	8.2953
76	Midlothian New Shaft (1843).....	do	do	do	do	80.7417	8.7506
77	Midlothian, screened.....	do	do	do	do	89.7248	8.9441
78	Creek Co.....	do	Chesterfield	do	do	81.5694	8.4168
79	Clover Hill.....	do	do	do	do	89.3991	7.6755
80	Chesterfield Mining Co.....	do	do	do	do	90.8313	8.9683
81	Tippacano.....	do	Dixie	do	do	90.2767	7.7485
82	Cannelton.....	Indiana	Perry	do	do	84.8746	7.3409
83	Welsh, average, 37 samples.....	Wales	Various	do	do	.....	9.0500
84	Newcastle, average, 17 samples.....	England	do	do	Report on coals, De la Beche and Playfair	.....	8.3700
85	Patent fuels, average, 6 samples.....	do	do	do	Main and Brown	.....	9.1683

TESTS OF COAL.

	Grate surface; sq. ft.	Heating surface; sq. ft.	Coal per sq. ft. of grate per hour; lbs.	Evaporation from and at 212° F.; lbs.	Authority.
UNITED STATES.					
Anthracite:					
Blackheath	36	1,144	13.87	9.33	Exp. Researches, Isherwood.
Do	36	952	12.44	8.34	Do.
Do	36	856	13.08	9.44	Do.
Do	36	760	12.86	9.57	Do.
Do	47.25	1,484	11.88	10.40	Do.
Do	41.25	1,057	10.74	10.35	Do.
Do	58.63	1,303	8.16	12.04	Do.
Do	58.63	1,303	7.92	11.55	Do.
Do	58.63	1,303	11.64	11.06	Do.
Do	58.63	1,303	10.36	10.41	Do.
Boston	36	1,144	12.61	8.80	Do.
Broad Mountain	36	1,144	11.91	8.23	Do.
Council Ridge	36	1,144	12.63	9.65	Do.
Hazleton	36	1,144	12.97	8.85	Do.
Lackawanna	36	1,144	12.56	9.22	Do.
Do	36	1,144	12.75	9.05	Do.
Lehigh	90	2,690	11.41	8.25	Do.
Locust Mountain	36	1,144	12.71	8.68	Do.
Do	36	.....	11.61	8.42	Do.
Do	36	952	13.33	8.95	Do.
Do	36	856	9.82	9.77	Do.
Do	36	760	10.50	9.89	Do.
Pittston	36	1,144	12.34	8.63	Do.
Seranton	36	.....	12.20	8.38	Do.
Schuylkill County	47.25	981	11.35	8.67	Do.
Spring Mountain	36	1,144	11.08	9.18	Do.
Susquehanna, Harvey's Mine	75.90	1,818	11.16	9.98	Do.
Susquehanna Valley	78.75	2,374	11.04	9.36	Do.
Semi-bituminous:					
Broadtop, Penn	58.63	1,303	11.62	10.32	Do.
Do	58.63	1,303	11.69	10.48	Do.
Do	36	1,144	10.94	9.97	Do.
Ormsby, Penn	90	2,690	4.41	9.44	Do.
Do	90	2,690	7.83	9.14	Do.
Do	90	2,690	12.19	8.99	Do.
Do	90	2,690	22.96	8.81	Do.
Brookfield, Penn	90	2,690	18.52	8.30	Do.
Glen Carbon, Penn	36	1,144	14.00	9.21	Do.
Cumberland, Md	78.75	2,374	11.52	9.30	Do.
Do	40	954	11.97	10.04	Do.
Do	99.17	2,060	9.45	8.73	Do.
Cumberland, Md., George's Creek	36	1,144	10.98	10.28	Do.
Do	75.90	1,818	11.03	10.74	Do.
Cumberland, Md	21	687	10.00	9.11	Experiments at Washington
Do	21	687	12.50	9.11	Navy Yard, 1886.
Do	21	687	15.00	9.93	Do.
Do	21	687	17.50	9.50	Do.
Do	21	687	22.50	7.29	Do.
Do	21	687	27.50	8.24	Do.
Do	21	687	30.00	7.49	Do.
Do	21	687	32.50	7.79	Do.
Do	21	687	35.00	7.23	Do.
Do	21	687	37.50	7.24	Do.
Do	21	687	40.00	6.61	Do.
Do	21	687	42.50	6.12	Do.
Do	21	687	45.00	6.25	Do.
Do	21	687	50.00	5.51	Do.
Frostburg, Md	30	960	7.82	10.34	Report of Board of Naval
Do	30	960	11.63	9.94	Engineers, 1878.
Do	30	960	13.99	9.69	Do.
New River, W. Va	30	960	7.99	10.96	Do.
Do	30	960	13.03	10.20	Do.
Do	30	960	14.37	10.14	Do.
Splint:					
Kanawha, W. Va	30	960	7.87	9.98	Do.
Do	30	960	12.98	9.48	Do.
Do	30	960	21.21	7.58	Do.
Bituminous:					
Eagleton, Penn	36	1,144	12.43	9.31	Exp. Researches, Isherwood.
Black Diamond, Wash	21.25	.....	.....	6.22	Mr. A. Worthington; tests
Renton, Wash. (screening)	21.25	.....	.....	6.77	at Genesee Mills, San Fran-
Seattle, Wash. (screening)	21.25	.....	.....	6.78	cisco, 1883; Babcock & Wil-
Do	21.25	.....	.....	7.69	cox boiler.
Seattle, Wash. (lump)	21.25	.....	.....	7.61	Do.
South Prairie, Wash	21.25	.....	28.90	8.88	Do.

TESTS OF COAL.—Continued.

	Grate surface; sq. ft.	Heating surface; sq. ft.	Coal per sq. ft. of grate per hour lbs.	Evaporation from and at 212° F., lbs.	Authority.
WELSH.					
Nixon's Navigation	37.90	1,084	21.70	9.91	German Adm'y tests, 1874-'85.
Do	26.25	1,116	88.50	8.57	Mr. F. C. Marshall, 1886.
Do	18.90	618	96.03	7.15	British Adm'y tests, 1880;
Do	18.90	618	78.90	7.60	Thornycroft torpedo-boat
Do	18.90	618	62.20	7.90	boiler.
Do	18.90	618	49.00	8.49	Do.
Thomas Merthyr	37.90	1,080	17.44	10.17	German tests, 1874-'77.
Naut Melyne Merthyr	37.90	1,084	16.13	9.69	Do.
Blaen-avon	37.90	1,084	18.40	9.91	Do.
Cwm-aman Merthyr, Aberdare	37.90	1,084	20.60	10.12	Do.
Fothergill's, Aberdare			24.17	10.69	British Adm'y tests, 1874-'77.
Globe Merthyr			22.13	10.78	Do.
Do			23.50	10.51	Do.
Do			24.17	10.65	Do.
Hood's Merthyr			24.17	10.92	Do.
Taylor's Merthyr			23.01	11.00	Do.
Do			23.66	11.07	Do.
Do			24.23	11.07	Do.
Radford's Navigation	15.30	711	18.30	11.33	Rich and Sumcey.
Powell's Duffryn	2.63	211	11.97	12.96	<i>Engineering</i> , Nov. 18, 1887;
Do	2.63	192	12.98	12.26	report of Messrs. Bramwell
Do	3.39	218	13.44	12.27	and Anderson.
Do	3.39	218	13.47	12.59	Do.
Do	4.18	167	20.91	10.14	Do.
Do	4.32	226	8.71	12.99	Do.
Do	4.69	238	9.39	11.21	Do.
ENGLISH.					
Cowpen Canbois Hartley			30.82	9.26	British Adm'y tests, 1876-'77.
Do	26.25	1,116	98.30	6.97	Mr. F. C. Marshall, 1886.
Do	26.25	1,116	107.90	6.89	Do.
Do	26.25	1,116	120.80	6.62	Do.
Do	26.25	1,116	118.10	6.57	Do.
Newcastle	37.90	1,084	23.14	8.63	German Adm'y test, 1875.
Roundwood Barnsley steam coal			24.30	9.83	British Adm'y tests, 1876-'77.
Do			24.70	9.71	Do.
Do			26.25	9.81	Do.
Longrigg Navigation			23.63	10.32	Do.
Do			24.17	10.30	Do.
Do			24.89	10.33	Do.
"Black Mine," Dukinfield Deep Pit	99	8,390	15.19	9.72	<i>Engineer</i> , July 3 and 17, 1885.
Do	99	8,390	17.91	8.97	Do.
SCOTCH.					
Loch Gelly	37.90	1,084	24.30	8.17	German Adm'y test, 1878.
Cannel	10.80	1,503	16.58	8.62	Isherwood.
Unknown	37.90	1,084	24.34	8.24	German Adm'y test, 1875.
WESTPHALIAN.					
Mean of 60 tests of coal from 10 mines	37.90	1,084	18.93	10.09	German Adm'y tests, 1874-'86.
Max.—Wolfsbank mine, 4 tests	37.90	1,084	18.91	10.47	Do.
Min.—Verein Bonifacius mine, 4 tests	37.90	1,084	20.64	9.85	Do.
AUSTRALIAN.					
Wallsend, Newcastle, N. S. W.	37.90	1,084	18.72	8.69	German Adm'y test, 1876.
Tivoli, Brisbane, Queensland	37.90	1,084	18.11	8.02	Do.
NEW ZEALAND.					
Waikato, hand picked			44.80	7.44	British Adm'y tests, 1876-'77.
Waikato, as supplied			40.48	7.49	Do.
Do			39.38	7.49	Do.
JAPANESE.					
Takasima	37.90	1,084	29.90	6.24	German Adm'y tests, 1875-'76.
Do	37.90	1,084	19.46	7.82	Do.

TESTS OF COAL.—Continued.

	Grate surface; sq. ft.	Heating surface; sq. ft.	Coal per sq. ft. of grate, per hour; lbs.	Evaporation from and at 212° F.; lbs.	Authority.
BRITISH COLUMBIAN.					
Wellington, screening	21.25	.....	28.20	7.80	Mr. A. Worthington, Genesee Mills, San Francisco, 1883; Babcock & Wilcox boiler.
Wellington, lump	21.25	.....	28.20	9.30	
East Wellington, screening	21.25	.....	28.20	7.72	
COMPRESSED FUEL.					
Crown preserved fuel—Cardiff	37.90	1,084	21.58	8.73	German Adm'y test, 1875.
Crown preserved fuel—"Pumpquort" .....	.....	.....	23.01	9.34	British Adm'y tests, 1876-'77.
Do .....	.....	.....	21.88	9.27	Do.
Crown preserved fuel—Nixon's Nav'n .....	.....	.....	24.00	10.53	Do.
Nixon's Navigation .....	.....	.....	23.63	10.38	Do.
Nixon, Tylor, and Cory .....	.....	.....	25.26	10.82	Do.
Grant's Patent Cambrian .....	.....	.....	26.46	10.83	Do.
Imperial .....	.....	.....	24.00	10.30	Do.
Do .....	.....	.....	24.17	10.27	Do.
Do .....	.....	.....	22.13	10.72	Do.
Do .....	.....	.....	22.32	10.76	Do.
Compressed fuel from New Zealand coal .....	.....	.....	44.80	7.44	Do.
Do .....	.....	.....	40.48	7.49	Do.
Do .....	.....	.....	39.38	7.49	Do.
Briquettes from Westphalian coal:					
Mean of 29 tests—10 varieties	37.90	1,084	19.52	10.02	German Adm'y tests, 1874-'86.
Max.—Franciska Tiefbau	37.90	1,084	18.90	10.47	Do.
Min.—Warmrevier zu Kohlscheid	37.90	1,084	11.62	9.05	Do.
Briquettes d'Anzin	70.90	3,264	41.09	9.85	French experiments with boiler of the <i>Marceau</i> , 1885; forced draft.
Do	70.90	3,264	51.19	9.77	Do.
Do	70.90	3,264	61.43	9.47	Do.
Do	70.90	3,264	60.96	9.64	Do.

Table of equivalents governing the issue and sale of fuel in the U. S. Army.

[Abstract of General Orders, No. 10, 1882, and No. 5, 1885.]

Market designation of coal.	Pounds equivalent to 1 cord average oak wood.
Forest Improvement anthracite (Richardson colliery).....	1,598
Wilkesbarre anthracite (Black Diamond)	1,598
Scranton anthracite (Delaware and Hudson Canal Co.).....	1,614
Scranton anthracite (Delaware, Lackawanna, and Western R. R. Co.).....	1,687
Scranton anthracite, not specified	1,841
Lykens Valley anthracite (Dauphin County, Penn.)	1,651
Pennsylvania anthracite, not specified	1,696
Raven Run mine, Pennsylvania, medium hard	1,818
Los Cerrillos, N. Mex., anthracite (Ortiz Grant)	1,657
Welsh anthracite	1,466
Queen Charlotte anthracite	2,626
Standard Coal Co., Somerset County, Penn., semi-bituminous	1,521
Philson Iron and Coal Co., Somerset County, Penn., semi-bituminous	1,537
Cumberland semi-bituminous	1,558
Pennsylvania bituminous (Simpson, Horner, & Sons, Monongahela River).....	1,653
Los Cerrillos, N. Mex., bituminous (Ortiz Grant)	1,742
La Plata mine, Fort Lewis, Colo., bituminous	2,000
Leavenworth, Kans., bituminous	2,307
Chestnut mine, Rock Creek Cañon, Mont., bituminous	2,466
Coal Creek colliery, Fremont County, Colo., bituminous	2,523
West Hartley bituminous, Cowpen colliery	1,993
Bituminous coals, not specified	1,624
Australian brown coal	1,646
Walsatch Rocky Mountain coal	2,406
Rock Springs mine, Rocky Mountains, lignite	2,491
Eastport coal, Coos Bay, Oregon	2,350
Coos Bay coal, not specified	2,626
Wober lignite, Chalk Creek, Summit County, Utah	3,168
Pittsburgh coal, Mount Diablo, Cal	2,065
Mount Diablo coal, not specified	2,582

Table of equivalents governing the issue and sale of fuel in the U. S. Army.—Continued.

Market designation of coal.	Pounds equivalent to 1 cord average oak wood.
Wellington coal, Departure Bay, Vancouver Island, British Columbia	2, 233
Nanaimo coal, Chase River, Vancouver Island, British Columbia	2, 070
Seattle brown coal	2, 450
Bellingham Bay coal	2, 641
Fort Stevenson, N. Dak., lignite	3, 712
West Virginia splint (Paint Creek)	1, 796
Scotch splint (Duke of Hamilton)	1, 970
Pittsburgh, Penn., bituminous (Thos. Fawcett & Sons' mines)	1, 706
Indiana cannel coal	2, 046
Davison's West Hartley	1, 970
Cowpen Cambois West Hartley	2, 129

Specific gravity, weight, bulk, etc., of various coals.

[W. R. Johnson, and others.]

(Coals.)	Specific gravity.	Weight per cu. ft., as stowed.	Bulk per ton, stowed.	Clinkers per 100 pounds.
ANTHRACITE.				
		<i>Pounds.</i>	<i>Cubic feet.</i>	<i>Pounds.</i>
Beaver Meadow, No. 3	1. 610	54. 93	40. 7	1. 01
Beaver Meadow, No. 5	1. 554	56. 19	39. 8	. 60
Forest Improvement	1. 477	53. 66	41. 7	. 81
Lackawanna	1. 421	48. 89	45. 8	1. 24
Lehigh	1. 590	55. 32	40. 5	1. 08
Peach Mountain	1. 464	53. 79	41. 6	3. 03
Welsh, Jones & Co.	1. 375	58. 25	38. 5	.....
Patent, Warlich's	1. 150	69. 05	32. 5	.....
BITUMINOUS.				
Best Cumberland	1. 313	52. 92	42. 3	2. 13
Blossburg, Penn	1. 324	53. 05	42. 2	3. 40
Clover Hill, Va.	1. 285	45. 49	49. 2	3. 86
Pittsburgh, Penn	1. 252	46. 81	47. 8	. 94
Pictou, Nova Scotia	1. 318	49. 25	45. 0	6. 13
Sydney, Australia	1. 338	47. 44	47. 2	2. 25
Welsh, Duffryn	1. 326	53. 22	42. 1	.....
Newcastle, Hartley	1. 257	50. 82	44. 0	3. 14
Carr's Hartley	1. 262	47. 88	46. 7	1. 86
Scotch, Dalkeith	1. 519	51. 09	43. 8	5. 63
Japanese, Takasima	1. 231	48. 30	46. 4	.....

ANALYSES OF COAL.

Pennsylvania anthracite.

[C. H. Ashburner, 1884.]

Coal field.	Coal bed.	No. of specimens.	Specific gravity.	Fixed carbon.	Volatile matter.	Sulphur.	Water.	Ash.
Northern (Wilkesbarre)	Mammoth	3	1. 575	83. 268	4. 381	. 727	3. 421	8. 203
Eastern Middle (Lehigh)	Wharton	3	1. 620	86. 404	3. 080	. 585	3. 713	6. 218
Do	Mammoth	5	1. 617	86. 379	3. 084	. 496	4. 119	5. 922
Western Middle (Shenandoah)	Buck Mountain	2	1. 667	82. 662	3. 949	. 462	3. 042	9. 885
Do	Primrose	2	1. 654	81. 590	3. 716	. 499	3. 541	10. 654
Do	Mammoth	5	1. 657	81. 143	3. 717	. 890	3. 163	11. 078
Do	Seven-foot	1	1. 651	80. 868	3. 978	. 512	3. 410	11. 232
Southern (Mauch Chunk)	Primrose	2	1. 584	87. 982	4. 125	. 506	3. 008	4. 379
Do	Mammoth	7	1. 631	83. 813	4. 275	. 641	3. 087	8. 184

ANALYSES OF COAL.—Continued.

Average composition of foreign coals (various sources).

Coal.	Specific gravity.	Carbon.	Hydrogen.	Oxygen.	Nitrogen.	Sulphur.	Ash.
Welsh anthracite	1.37	91.70	3.78	1.30	1.00	.72	1.50
Welsh, Penrikyber	1.32	89.00	4.25	1.45	1.00	.80	3.50
Welsh, Powell's Duffryn	1.32	88.10	4.20	2.17	1.63	.90	3.00
Welsh, Aberdare	1.32	86.80	4.32	3.35	.70	.83	4.00
Welsh, ordinary	1.32	83.78	4.79	4.15	.98	1.43	4.87
Newcastle	1.26	82.24	5.42	6.44	1.61	1.35	2.94
Newcastle, ordinary	1.27	78.00	5.15	8.63	1.30	1.32	5.60
Durham	1.27	80.00	5.10	7.23	1.27	1.40	5.00
Yorkshire	1.29	78.10	4.84	10.53	1.43	1.10	4.00
Derbyshire	1.28	79.00	4.88	10.84	1.30	1.00	3.00
Nottinghamshire	1.28	75.20	5.60	12.34	1.33	1.23	4.30
Lancashire	1.27	79.50	5.42	8.51	1.18	1.50	4.70
Scotch	1.26	78.53	5.61	9.69	1.00	1.11	4.03
Scotch, ordinary	1.27	70.00	4.85	13.50	1.35	1.70	6.00
French, anthracite	1.35	90.90	1.47	1.53	1.00	.80	4.30
French, bituminous	1.31	83.80	4.82	4.86	1.22	1.30	4.00
Russian, Grushefka, anthracite ..	1.40	90.70	3.50	1.40	1.00	.80	2.80
Russian, Mius River, bituminous ..	1.32	83.90	4.10	4.50	1.00	1.50	5.00
Nova Scotia, Spring Hill		78.51	5.19	5.30	.68	1.12	5.20
Nanaimo, Vancouver Island, B. C. ..	1.28	66.93	5.32	8.70	1.02	2.20	15.83
Chile, Concepcion Bay	1.29	70.55	5.76	13.24	.95	1.98	7.52
Australia, Sydney, N. S. W.	1.30	82.39	5.32	8.32	1.27	.70	2.00
Australian, brown	1.27	73.20	4.71	12.35	1.11	.63	8.00
Borneo, Labuan	1.28	64.52	4.74	20.75	.80	1.45	7.74
Borneo, Pengaron district	1.37	71.00	5.75	17.80	.75	.70	4.00
Borneo, Pulo Laut	1.32	58.60	6.15	16.25	1.60	.90	16.50
Formosa, Keelung mines		78.26	5.70	10.95	.64	.49	3.96
Patagonia, Magellan Straits	1.29	62.25	5.05	17.54	.63	1.13	13.40

UNITED STATES.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Alabama:					
Black Diamond Coal Co., Walker County	68.34	22.15	1.66	1.85	6.00
Cahaba Coal Mining Co., Bibb County	60.75	34.12	2.24	.48	2.41
Woodward Coal and Coke Co., Coaldale	65.12	32.24	.....	.56	1.27
Watts Coal and Iron Co., Warrior	63.03	32.68	1.17	1.20	1.92
Pratt seam, Great Warrior field	64.30	32.08	1.07	.47	2.08
Do	61.60	32.48	1.50	.92	5.42
California:					
Mount Diablo, Black Diamond	46.84	33.89	14.69	.....	4.58
Oregon:					
Coos Bay	41.98	32.59	20.09	.....	5.34
Coos Bay, Newport mine	34.95	41.55	15.45	2.53	8.05
Pennsylvania:					
Clearfield County, Powelton Broadtop	78.31	15.00	.....	1.15	5.54
Pittsburgh district	55.82	34.31	2.34	.....	7.18
Virginia:					
Clover Hill	56.94	30.98	1.40	.52	10.16
Pocahontas Flat Top (average of 10 samples) ..	74.07	18.83	.69	.78	5.65
Pocahontas Flat Top (average of 15 samples) ..	72.71	18.81	1.01	.79	5.19
West Virginia:					
New River	70.66	26.64	.67	.50	1.53
Winifrede	58.73	36.33	1.86	.36	2.72
Washington:					
Bellingham Bay	59.90	29.54	3.98	.58	6.00
Black Diamond	45.11	47.19	3.11	trace.	4.58
Blue Canyon (washed)	61.15	29.81	.42	.27	8.35
Carbonado	52.11	42.27	1.90	trace.	3.52
Franklin, No. 10 bed	57.68	33.92	3.33	.....	5.07
Franklin, No. 12 bed	50.78	34.63	3.66	.....	10.93
Gilman	37.19	47.07	4.90	.88	10.06
New Castle	43.90	46.70	2.12	.18	7.15
Roslyn	52.65	39.70	3.10	trace.	4.55
Skagit Cumberland, No. 1	77.41	7.46	.25	.23	14.88
Skagit Cumberland, No. 2	80.20	8.44	.30	.21	11.06
Skagit Cumberland, No. 3	81.37	11.10	.42	.86	7.11
Wilkeson	66.75	25.88	1.33	trace.	6.04
Alaska:					
Cook's Inlet	49.89	39.87	1.25	1.20	7.82
Kootznahoo Inlet, Admiralty Island	45.15	37.02	3.74	.72	14.09

ANALYSES OF COAL.—Continued.

BRITISH COLUMBIA.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Baynes Sound mine	64.70	29.55	.....	.....	5.75
Union mine, Comox	68.27	27.17	.....	.....	2.86
Wellington, Departure Bay	59.72	30.95	2.75	.....	6.58
Do	54.85	34.15	2.15	0.27	8.85
Nanaimo	48.48	36.10	1.70	.....	13.72
Do	51.95	36.05	2.25	2.39	9.75

NOVA SCOTIA.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Cape Breton, Sydney mines	61.50	31.14	3.04	.....	4.32
Cape Breton, Gowrie mines	63.00	30.64	2.86	.....	3.50
Pictou, Acadia mines	57.57	32.27	2.10	.50	7.56
Pictou, Albion mines	66.50	24.28	1.48	.....	7.74
Spring Hill	60.82	34.38	1.02	.....	3.78

INDIA.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Karharbari	66.85	24.00	.....	.....	9.15
Umari	63.03	29.25	.....	.....	7.68
Raniganj	63.30	27.50	.....	.....	9.20
Makum	60.30	35.90	.....	.....	3.80
Garohills	51.80	45.60	.....	.....	2.60

CHINA.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Yangtze River:					
Mun-to-san, semi-anthracite, soft	71.00	19.00	.....	.....	10.00
Soe-mah-poo, semi-anthracite, soft	80.00	11.00	.....	.....	9.00
Woo-shen-tung, semi-anthracite, soft	47.50	13.00	.....	.....	39.50
Chin-san, semi-anthracite, hard	73.00	13.00	.....	.....	14.00
Tse-lung-chung, semi-anthracite, soft	73.30	13.50	.....	.....	13.20
Kun-chok-wan, semi-anthracite, hard	72.50	16.50	.....	.....	11.00
Ho-peck-taung-ho, semi-bituminous	63.80	28.00	.....	.....	8.20
Taung-ho	74.00	9.00	.....	.....	17.00
Hoo-nan, hard anthracite	84.20	10.80	.....	.....	5.00
Han-kow, anthracite	84.00	11.00	.....	.....	5.00

NEW ZEALAND.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Auckland:					
Kama mine, Whangarei, pitch	50.01	37.69	9.61	.....	2.69
Walton's mine, Whangarei, pitch	38.80	41.20	7.20	.....	12.80
Whangarei, glance	50.11	38.68	8.01	.....	3.20
Waikato, brown	50.01	29.97	19.82	.....	2.20
Okoko, Waipa, brown	39.83	33.74	22.21	.....	4.22
Canterbury:					
Acheron, anthracite	84.12	2.06	1.80	.....	12.12
Malvern, brown	49.99	35.42	11.79	.....	2.80
Malvern Hills, altered brown	53.29	32.04	12.65	.....	2.02
Do	68.54	19.89	4.15	.....	7.42
Rakaia Gorge, brown	50.12	21.61	24.09	.....	4.18
Rakaia Gorge, glance	64.51	21.27	6.76	.....	7.46
Homebush Colliery, Malvern, brown	47.70	30.90	19.20	.....	2.20
Collingwood, bituminous	44.03	22.34	3.61	.....	30.02
Do	50.78	40.41	3.60	.....	5.21
Otago:					
Kaitangata Creek, brown	44.11	38.32	15.44	.....	2.13
Do	39.41	37.25	19.61	.....	3.73
Shag Point, brown	45.30	30.10	19.20	.....	5.40
Otamataura Creek, bituminous	52.89	36.63	2.19	.....	8.29
Preservation Inlet, bituminous	60.88	20.69	4.33	.....	6.19
Reefton:					
New Durham mine, bituminous	54.09	37.64	4.36	.....	3.91
New Durham mine, brown	48.02	35.57	14.21	.....	2.20
Lankey's Creek, altered	58.01	35.29	6.79	.....	2.01
Murray's Creek, bituminous	53.96	35.87	8.18	.....	1.89
Dudley mine, brown	48.10	35.88	14.21	.....	1.81
Springfield Colliery, brown	38.00	31.50	18.50	.....	11.80

ANALYSES OF COAL.—Continued.

NEW ZEALAND.—Continued.

	Fixed carbon.	Volatile matter.	Water.	Sulphur.	Ash.
Westland:					
Grey River, pitch	34.80	55.40	6.20	.....	2.60
Grey River, bituminous	62.37	29.44	1.99	.....	6.20
Black Creek, Grey River, pitch	60.20	29.97	8.01	.....	1.82
Kanieri, bituminous	64.82	24.17	3.81	.....	7.20
Do	52.38	43.44	1.39	.....	2.79
South of Ross, bituminous	42.53	31.43	6.58	.....	19.40
Westport:					
Brown	56.01	37.17	2.60	.....	4.22
Mokihinui, bituminous	55.59	38.86	3.16	.....	2.39
Do	59.75	32.14	3.97	.....	4.14
Do	57.92	34.94	3.96	.....	3.18
Brunner mine, bituminous	56.62	35.68	1.59	.....	6.11
Near Cape Farewell, bituminous	48.59	43.17	2.18	.....	6.06

NEW SOUTH WALES.

I.—Northern District.

	Specific gravity.	Composition, per cent., exclusive of water.						Water, per cent.	Coke, per cent.
		Carbon.	Hydrogen.	Oxygen.	Nitrogen.	Sulphur.	Ash.		
Wallsend	1.333	79.96	6.26	7.08	0.68	1.25	4.77	2.75	61.86
Waratah	1.303	81.06	5.81	6.52	1.23	1.14	4.24	2.21	59.97
Australian Agricultural Company, Newcastle.	1.297	78.76	6.34	7.28	0.79	1.36	5.47	2.20	62.87
Greta	1.287	78.41	6.60	9.34	1.43	1.44	2.78	2.25	57.13
Russel's mine	1.274	77.37	6.48	10.46	1.51	1.43	2.75	1.85	52.65
Anvil Creek	1.323	77.15	5.91	6.07	1.46	1.48	7.93	1.74	55.70
Cardiff mine	1.286	82.25	4.38	6.95	1.03	0.35	5.04	1.85	54.43

II.—Western District.

Eskbank	1.335	72.30	5.43	6.65	0.85	1.60	13.17	2.00	62.88
Bowenfels	1.399	70.72	5.65	9.65	0.93	1.38	11.67	2.36	.....
Lithgow Valley	1.329	69.41	6.10	11.70	1.03	1.44	10.32	1.95	62.46
Vale of Clwydd	1.323	69.86	5.82	11.89	1.02	1.40	10.01	2.10	63.18

III.—Southern District.

Nattai .....	.....	91.24	3.60	0.59	.....	trace.	4.56	3.28	92.37
Mount Kembla	1.363	80.67	5.30	1.58	0.70	0.87	10.88	1.50	.....
Mount Keira	1.379	78.82	5.17	3.87	1.33	1.00	9.81	1.15	74.35
Berrima	1.364	69.92	4.55	13.09	0.56	1.30	10.58	1.70	64.24
Bulli (R. Smith)	1.471	76.35	4.75	5.04	.....	0.55	13.31	1.03	74.78

Coals of the northern district are, as a class, superior to those of the southern, which are in turn superior to those of the western. The northern coals are brighter in appearance and exhibit greater lamination of structure than the southern, contain a larger proportion of volatile hydrocarbons, coke more readily, and give off much more smoke. The western coals are only partially developed, and are very dry; they are dull in appearance, and coke only when freshly mined. Coals of the northern district are shipped from Newcastle and Sydney, those of the southern from Coal Cliff, Bulli, and Wollongong.

Average price, during nine years, of best Welsh steam coal, per ton, f. o. b., at Cardiff.

[Compiled from weekly trade reports in Iron.]

	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
January	\$2.80	\$2.74	\$2.56	\$2.19	\$2.07	\$2.27	\$3.22	\$3.65	\$3.80
February	2.86	2.74	2.56	2.19	2.09	2.25	3.41	3.77	3.74
March	2.82	2.80	2.56	2.13	2.11	2.27	3.41	3.91	3.59
April	2.78	2.74	2.56	2.19	2.01	2.25	3.45	3.73	3.57
May	2.80	2.68	2.56	2.25	2.05	2.31	3.37	3.70	3.74
June	2.80	2.68	2.49	2.13	2.07	2.49	3.38	3.75	3.69
July	2.80	2.68	2.43	2.11	2.31	2.53	3.41	3.53	3.50
August	2.62	2.68	2.43	2.07	2.31	2.72	3.38	3.71	3.52
September	2.68	2.68	2.37	2.13	2.25	2.78	3.41	3.71	3.41
October	2.80	2.68	2.31	2.13	2.19	2.76	3.28	3.75	3.33
November	2.80	2.62	2.25	2.10	2.25	2.95	3.28	3.65	3.18
December	2.78	2.56	2.19	2.07	2.31	3.10	3.47	3.75	3.16

Average price, during nine years, of best Northumbrian steam coal, per ton, f. o. b., at Newcastle.

[Compiled from weekly trade reports in Iron.]

	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
January	\$2.08	\$2.14	\$2.08	\$1.95	\$1.84	\$1.80	\$2.31	\$3.25	\$2.84
February	2.08	2.19	2.07	1.95	.....	1.76	2.51	3.18	2.80
March	2.08	2.13	2.07	1.90	.....	1.76	2.51	3.10	2.91
April	2.19	2.17	2.14	1.91	.....	1.76	2.39	3.10	2.95
May	2.27	2.31	2.25	1.97	1.95	1.80	2.43	3.16	3.15
June	2.31	2.25	2.16	1.95	1.95	1.85	2.31	3.16	3.08
July	2.31	2.25	2.11	1.91	2.01	1.89	2.34	3.16	3.04
August	2.37	2.20	2.14	1.90	2.01	1.86	2.40	3.25	3.04
September	2.31	2.25	2.09	1.90	1.92	1.83	2.38	3.16	2.95
October	2.27	2.31	2.03	1.90	1.85	1.89	2.37	3.04	2.76
November	2.14	2.19	2.01	1.85	1.83	2.07	2.65	2.86	2.52
December	2.14	2.09	1.95	1.84	1.83	2.17	2.89	2.80	2.49

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Ferndale.	Insole's Merthyr.
Harris's Deep Navigation.	*Lewis's Merthyr.
Nixon's Navigation.	Locket's Merthyr.
National Merthyr.	Ocean Merthyr.
Taylor's Merthyr.	*Standard Merthyr.
Penrikyber.	Ynysfaio Merthyr.
Powell's Duffryn.	
Albion Merthyr.	NORTH COUNTRY.
Cambrian Navigation.	Cowpen Cambois Hartley.
Cory's Merthyr.	Davison's West Hartley.
Cyfarthfa.	West Hartley Main.
Cymmer.	Broomhill West Hartley.
Dowlais Merthyr.	Hasting's Hartley.
Globe Merthyr.	Maud West Hartley.
Great Western Navigation.	*Wigan Hartley.
Hill's Plymouth Merthyr.	
Hood's Merthyr.	

* Too soft for shipment abroad.



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